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MINISTRY OF AGRICULTURE (DEPARTMENT OF AGRICULTURE & COOPERATION)

NATIONAL PROJECT ON ORGANIC FARMING

COMMITTEE ON ESTIMATES 2015-2016

NINTH REPORT

SIXTEENTH LOK SABHA

सत्यमेव जयते

LOK SABHA SECRETARIAT
NEW DELHI

NINTH REPORT

COMMITTEE ON ESTIMATES
(2015-2016)

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MINISTRY OF AGRICULTURE
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NATIONAL PROJECT ON ORGANIC FARMING

Presented to Lok Sabha on 13.08.2015

LOK SABHA SECRETARIAT
NEW DELHI

August, 2015*/Shravana,* 1937 *(Saka)*

E.C. No. 1494

Price: ₹ 125.00

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Published under Rule 382 of the Rules of Procedure and Conduct of Business in Lok Sabha (Fifteenth Edition) and Printed by the General Manager, Government of India Press, Minto Road, New Delhi-110 002.

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COMPOSITION OF THE COMMITTEE ON ESTIMATES
(2015-16)

Dr. Murli Manohar Joshi — *Chairperson*

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2. Shri Sultan Ahmed
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26. Md. Salim
27. Shri Arvind Sawant
28. Shri Ganesh Singh
29. Shri Rajesh Verma
30. Shri Jai Prakash Narayan Yadav

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* Elected *vide* Lok Sabha Bulletin Part-II No. 2181 dated 31.07.2015. Consequent upon vacancy caused by the death of Shri Dileep Singh Bhuria, MP on 24 June, 2015.

SECRETARIAT

1.	Shri Devender Singh	—	*Additional Secretary*
2.	Shri Vipin Kumar	—	*Director*
3.	Shri Srinivasulu Gunda	—	*Additional Director*
4.	Shri U.C. Bharadwaj	—	*Deputy Secretary*

INTRODUCTION

I, the Chairman of Committee on Estimates (2015-16) having been authorized by the Committee to submit the Report on their behalf, do present this 9th Report on 'National Project on Organic Farming' pertaining to the Ministry of Agriculture (Department of Agriculture & Cooperation).

2. With the significant shift towards minerals-based farming in late sixties, India ushered into the Green Revolution, which initially paid rich dividends in terms of higher productivity and pulled the country out of the fear psychosis of food insecurity for the burgeoning Indian population. However, in the long run, it brought in its wake a very negative cascading impact on our ecological plateau to wit, degradation of soil health, gradual low yields, emergence of new pests/diseases, wiping out of eco-friendly micro organisms and percolation of toxic chemicals into our food chain threatening the very existence of our biosphere. Taking note of the adverse consequences of chemical based farming, Government of India launched a National Project on Organic Farming (NPOF) with an outlay of Rs. 57.05 crores as a Pilot project with effect from 01.01.2004 (X Plan) and continued it during XI Plan with an outlay of Rs. 101 crore. Later on, in the middle of XII Plan, this scheme was made a sub-component of 'Soil Health Mission' which itself is a component of 'National Mission on Sustainable Agriculture (NMSA) with a paltry outlay of Rs. 293 crore for the remaining period of XII Plan.

3. Further, in absence of clear cut demarcation of responsibilities between the Ministries of Agriculture and Commerce and Industry with respect to promotion of organic farming scheme, no-one seemed to take the overall responsibility for effective implementation of the scheme. Further, lack of integration and coordination among concerned Ministries/Departments/ICAR/Agriculture Universities/Krishi Vigyan Kendras and other allied agencies, the promotion of organic farming could not receive the desired impetus. A holistic approach with a comprehensive National Policy on Organic Farming was yet to be evolved. The organic farming has the potential to increase 30 per cent employment by way of resource recycling, certification process, product marketing and packaging. Besides, organic farming would have immense unquantifiable benefits for human health and the entire eco system.

4. In the above backdrop, the Committee selected this subject for indepth examination and Report.

5. The Committee took oral evidence of the representatives of the Ministry of Agriculture (Department of Agriculture & Cooperation and Department of Agricultural Research and Education) and the Ministry of Commerce and Industry on 20.01.2015. The Committee also examined the Memoranda on the subject sought and received from the public and experts and heard the views of some renowned agricultural scientists/ experts/farmers at their sittings held on 01.01.2015, 20.01.2015, 09.02.2015, 10.02.2015 and 10.03.2015.

6. The draft Report on the subject was considered and adopted by the Committee at their sitting held on 10.08.2015.

7. The Committee wish to express their sincere thanks to the representatives of the Ministry of Agriculture (Department of Agriculture & Cooperation and Department of Agricultural Research and Education) and the Ministry of Commerce and Industry, who appeared before them and placed their considered views on the subject and for furnishing information required in connection with examination of the subject. The Committee also place on record their sincere thanks to those who furnished their views to the Committee including Dr. M.S. Swaminathan and the domain experts namely, Dr. Mangala Rai, Shri G.N. Raju Yadav, Dr. Vandana Shiva, Dr. K.K. Tomar, Dr. S.P.S. Sirohi, Shri Sunil Mansinghka, who appeared before the Committee and shared their invaluable views and expert knowledge.

8. For facility of reference and convenience, the observations/recommendations of the Committee have been printed in Bold in Part-II of the Report.

NEW DELHI;
10 *August*, 2015
19 *Shravana*, 1937 (*Saka*)

DR. MURLI MANOHAR JOSHI
Chairperson,
Committee on Estimates.

PART I

REPORT

CHAPTER I

ORGANIC FARMING—INTRODUCTION

Organic farming — Definitions

According to International Federation of Organic Agriculture Movement (IFOAM), 'organic agriculture' is a production system that sustains the health of soils, eco systems and people. It relies on ecological processes, bio-diversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved. The Food and Agriculture Organization (FAO) defines organic farming as a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. This is accomplished by using, wherever possible, agronomic, biological and mechanical methods, as opposed to using synthetic materials, to fulfil any specific function within the system.

1.2 According to the Handbook of Agriculture, brought out by the ICAR, Organic farming involves the use of renewable resources and recycling, returning to the soil the nutrients found in waste products. Organic farming respects the environment's own system for controlling pests and diseases in raising crops and livestock without the use of synthetic pesticides, herbicides, chemical fertilizers, growth hormones, antibiotics or gene manipulation. Also meat and poultry production is regulated with particular concern for animal welfare and by using natural foodstuffs. Thus, organic farming differs from modern intensive farming systems as in organic farming farmers use a range of techniques that help sustain ecosystems and reduce pollution.

1.3 The Ministry of Agriculture (Department of Agriculture & Cooperation) further added as follows:—

> "As per the National Programme for Organic Production (NPOP), Ministry of Commerce, organic agriculture is defined as Organic agriculture is a system of farm design and management to create eco system, which can achieve sustainable productivity without the use of artificial external inputs such as chemicals, fertilizers and pesticides."

Advantages of Organic Farming

1.4 The major advantages of organic farming *vis-a-vis* the chemical farming as submitted by the Ministry of Agriculture (Department of Agriculture & Cooperation) are as under:—

- Maintains environmental health by reducing pollution;
- Reduces human and animal hazards by lowering the level of chemical residues in the products;

- Keeps agricultural production sustainable;
- Reduces the cost of agricultural production by relying on internal sources for nutrient, pest and disease management;
- Improves soil health;
- Ensures the optimum utilization of natural resources;
- Improves soil physical properties such as granulation, tilth, aeration, and facilitates easy plant root penetration and improves water-holding capacity;
- Improves supply and retention of soil nutrients, and promotes favourable chemical reactions in the soil;
- promotes job creation and provides 30% more jobs than chemical farming by way of resource recycling, certification, product marketing and packaging.

The Ministry also highlighted the special incentives being extended to chemical farming:

- Huge financial subsidy to chemical fertilizer producing factories while no subsidy is given to individual farmers/groups who are producing organic manures/pesticides etc.
- Funding for research, extension and development are more focussed towards chemical farming. Very few institutions or centres carry out research and promotion of organic farming while >90% funds are provided towards agriculture supported with chemicals.
- The Agricultural Education system is predominantly oriented towards chemical farming and as on date no State Agricultural University is offering degrees on organic /traditional farming systems.
- Chemical fertilizers and pesticides are promoted through Fertilizer Corporation and pesticide manufactures. However, such undertakings for promotion of organic sources as nutrient and pest/disease management seldom exist.

1.5 Apprising the Committee of the need to switchover to organic farming, a representative of Ministry of Agriculture (Department of Agriculture & Cooperation), deposed:—

> "There are human health problems because many of these chemicals and the pesticides which we use, find their way into food and that leads to a demand for setting up the maximum residual limit. In fact, in India, that is how the organic farming was given an impetus by the Government under the National Programme of Organic Production which is being monitored by the Commerce Ministry. When our food products started getting rejected by the US and the European markets, then the Government of India came out with the NPOP, the National Programme for Organic Production in the year 2000."

1.6 Citing the importance of organic farming, an agricultural expert submitted:—

"Organic agriculture aims at the human welfare without any harm to the environment, which is the foundation of human life itself. The relatively high success of organic farming in some countries are due to the high awareness of the health problems caused by the consumption of contaminated food products, the ill effects of environment degradation, appropriate support by the Government and organizations like the European Union and International Federation of Organic Agriculture Movements (IFOAM). In India, also, the necessity of having an alternative agriculture method which can function in a friendly ecosystem while sustaining and increasing the crop productivity is realized. Organic farming is recognized as the best known alternative to the modern inputs based agriculture. The progress of organic agriculture in India is though very slow but steady. India has the potential to become a major organic producing country given the international demand for our diversified farm products from different agro climatic regions, the size of the domestic market and above all the long tradition of environment friendly farming and living. Indian agriculture in a way may be regarded as organic because majority of its cultivated area is under rainfed cultivation and only about 38% of cultivated land is under irrigation and in rainfed areas, there is little use of fertilizers and other agriculture chemicals on account of risks associated, resources poor farmers and smaller land holdings."

1.7 Explaining the benefits of organic farming to the Committee, Dr. Vandana Shiva from Research Foundation for Science, Technology and Ecology, New Delhi, testified that:—

"The first benefit of organic farming is the fact that it always allows you to get rid of the high cost of external inputs. Agriculture has been done for 10,000 years. It is only in India in the last 50 years and globally in the last century that chemicals entered farming ...

Chemical fertilizers have destroyed the original sources of soil fertility which are the micro organisms in the soil. This is the year of soil declared by the United Nations. Every where the contribution of earthworms, soil organisms is coming out. They produce far more than any other external input could ever give you. Most importantly, most of the fertilizers have been based on Nitrogen, Potassium, and Phospate where as soils need micronutrients and trace elements. Our body needs micronutrients and trace elements and our body needs micronutrients and trace elements. So, NPK system creates deficient soils and deficient plants."

1.8 Refuting the argument that India needs chemical farming to free itself from hunger, is false for three reasons, Dr. Vandana Shiva submitted as under:—

"It is false because all we have grown since the chemical farming was introduced through the Green Revolution is rice and wheat as if we did not need the pulses for protein, as if we did not need the oilseeds for oil which allows our body to absorb nutrients, as if we did not need the grains and the vegetables. So, we actually have lost a lot of nutrition in the process and the wheat and the rice is

rotting in the FCI godowns. Millets which are the most nutritious like the Ragi in the South and Mandwa in the hills, Jhangora, Corny, Amaranth, Buckwheat these are miracle crops because their nutrition is so high. Ragi has more Calcium than any other food plant. Jhangora which is called barnyard millet has more minerals than any other crop plants. These were defined as inferior grains. They were defined as backward crops. And, part of the reason they became orphan crops was because the West did not work on them. They worked on rice, wheat and corn initially. So, those crops were pushed for pushing chemical fertilizers. First, in terms of nutrition, our nutrition basket came down which is why every fourth Indian today is hungry and every second child as the National Family Health Survey has shown is wasted which in effect means half of India's future is not going to grow to its full mental and physical potential which, I believe, is a very serious crisis. So, in terms of nutrition, chemical farming is not producing more; in terms of productivity too, chemical farming has not produced more. What is usually measured is yields of individual crops and not biodiversity of eco-system and what is measured usually are the yields in experimental farms which has all the water, all the chemicals to put in, not the yields in the field of a farmer who cannot get water and who does not have the money to buy the inputs.

The United Nations had said that to call these varieties bred for chemicals high yielding varieties is wrong because they should be called high response varieties. They have been bred to respond to large chemical inputs. When I travel in the country if there is a drought, our drought tolerant varieties and organic farms have production and there is zero production for those who are waiting to grow their chemical rice or the chemical wheat.

There is a third reason why this argument of organic not being able to provide us food security is not true, in the last year, 2014, which was the United Nation's year of the family farm, the UN put out a lot of material. UNCTAD which is the trade body, UNEP which is the environment body, FAO which is the Food and Agriculture Organisation all put out data that organic farms can double production. In fact, if we have to address food security, the only way we can do it is through organic farming...."

1.9 In a written reply submitted to the Committee, Ministry of Agriculture (Department of Agriculture and Cooperation) submitted that organic farming is advantageous particularly for the resource poor small and marginal farmers of rainfed areas where the use of costly chemical fertilizers is lower than national average. Total area under organic farming is reported as 7.2 lakh hectares and is miniscule as compared to the net sown area of 140 million hectares in the country. The potential for organic farming is in the niche market that commands premium price for these products. Keeping in view the potential demand, attention needs to be focused on areas which are under natural farming and also in rainfed areas where majority of the farmers are small and marginal and are constrained to practice intensive conventional farming. In these areas, high value crops that fetch premium price to the farmers have to be grown under organic conditions.

1.10 While allaying the apprehension about the affordability of small and marginal farmers to switch over to organic farming from chemical farming which requires them to keep their agricultural land vacant at least for three years, a representative of Ministry of Agriculture (Department of Agriculture & Cooperation) deposed before the Committee as under:—

> "The small and marginal farmers who are having less than two hectares of land, they are resource poor. They generally cannot afford expensive chemicals, pesticides or fertilisers. As it is, their consumption is very low on that account. They are not able to afford irrigation also because it is not practical. Secondly, we have a system of providing subsidy for the conversion period. We have the details in this book. It is about Rs. 20,000 per hectare that is provided to the farmer for going organic."

1.11 A representative of Alliance for Sustainable & Holistic Agriculture (ASHA) underlined the importance of the quality of organic soil for better water absorbing and harvesting capacity as under:—

> "Organic farming is also associated with decreased irrigation needs by about 30- 50%. This becomes an important part of adaptation in drought conditions. The better drainage and water holding capacity of organic soils reduces the risk of drought and soil erosion, for instance. Organic farming practices are in a good position to maintain productivity in the event of drought, irregular rainfall events and rising temperatures, notes a recent technical paper from International Trade Center (WTO) and FiBL. This paper notes that soils under organic management retain significantly more rainwater, thanks to the "sponge properties" of organic matter. Water percolation is 15-20% more in organic systems. Water capture in organic plots was twice as high as conventional plots during torrential rains, which in turn reduces the risk of floods. Given both the mitigation and adaptation potential that organic farming presents in the context of climate change, it becomes important that more emphasis is placed in promoting such farming systems on a wider scale."

1.12 Emphasizing the ineffectiveness and adverse impact of unabated and excessive use of chemical fertilizers, Dr. Mangala Rai, a former Secretary, Department of Agriculture and Education/DARE and ex-DG, ICAR submitted before the Committee as under:—

> "For example, at the time of starting of green revolution in sixth decade, we used to get 50 kilogram foodgrains by applying major nutrients of one kilogram nitrogen, phosphorus and potash. Now by applying one kilogram nutrients, the capacity of our products has decreased by five times.
>
> Secondly, I would like to mention is that when our country got independence, there was deficiency of only nitrogen in our land. Till the year 2007, deficiency therein has increased to nine elements. Sulphur, Boron and Zink are included in it. If I talk about Sulphur, Boron, Zink, around 50% land has deficiency thereof when micro-nutrients and secondary nutrients are decreasing and you won't get appropriate response even if keep on applying nitrogen, phosphorus and potash.

I don't subscribe to the view that it is organic versus inorganic. There has been adverse effect even after to the inorganic utilization. Therefore, it has become essential to apply organic in the present scenario. Why it has became necessary. There was 0.5% carbon content in lands in Punjab during the green revolution. How, it has been reduced to half i.e. 0.25% when there is no carbon content in the land then from where becteria will come? We are not concerned about the becteria contents. Today, there are 1.5 million species of fungicible on the earth, 30 million species are of insects. There are around 50 million species in all. Out of these we human being are homosapians. In a gram land, there are thousands of species of micro-nutrients. There are engymes in permutation - combination, which produce several things, when it becomes organic then an atmosphere is created where productivity of nutrients and quality of productivity increases."

1.13 He further added that:—

"Not only the micro nutrients but you are even importing secondary nutrients. How much and how long you will keep on importing them? I feel that the nutritional imbalance in agriculture is resulting in constant deterioration of soil health and in decrease its productivity 'soil-biota' is not proving to be effective in the absence of organic. That's why soil is called living legend, there is a mention of integrated farming that live-stock, horticulture, agriculture, fisheries, poultry, piggery and goatery all are reinforcing. A composite approach and an integrated management is required to be adopted. Science based integrated approach is required, which forms part of agro-system as crop or commodity. Agro system is required to be fitted into Eco system in order to make Eco system so healthy wherein land, produce, human, animals and birds all should be able to exist. In my view it is not organic versus inorganic.

I am not so concerned about organic-inorganic, but I am more pained to see the imbalanced use of fertilizers or imbalanced use of nutrients. Nitrogen, Phosphorus, Potash should be in the ratio of 4:2:1, but today it is close to 7:3:1 across the country. Mr. Chairman, Sir, I want to make a mention about Punjab, wherein the N:P:K ratio has reached 39:9:1. In addition to this, we are creating distortion through the burden of Rs. 70,000 croe subsidy. This is one aspect. In case of organic, the root would have been much deeper and there would have been 'porosity' also. Porosity would have helped in increasing 'microbial' activity. The menifestation would have resulted in good quality produce after the interaction of inorganic and organic but it is not happening.

Out of the total nitrogen applied in agriculture, more than 50 per cent of it is fixed and produced by the atmosphere through the lightening or by the 'microbes'. Whether there is any system in the country today? It is a living organism, Mr. Chairman, Sir, you have mentioned about the pest control, but how they will be produced, stored, transported or applied in living form, parasites and 'predators'. There is some space for development but whether parasites/ predator are being produced, stored, transported or applied appropriately anywhere? It is living organism. They are not being transported in living form or applied in fields in the country."

1.14 Dr. Swaminathan, retired Prof. & Ex-DG, ICAR in a note submitted to the Committee highlighting the importance and challenges of organic farming stated as under:—

> "Organic farming has been both a way of life and a means to livelihood since the birth of agriculture. It was only when mineral fertilizer was discovered by Liebig and other chemists in the 19th century that the application of mineral fertilizers started. The challenges in organic farming are (a) replenishment of soil fertility, and (b) plant health management. Thus, both soil health and plant health management requires interventions which will have to be tailored to the cropping/farming system. Crop livestock integration makes organic farming more effective.
>
> Organic agriculture attends concurrently to the physics, chemistry and microbiology of the soil, while mineral fertilizers only meet the nutrient needs of the soil and not their properties in the area of hydraulic conductivity. Unfortunately, the available organic manures are not adequate to achieve higher productivity. Farm size is getting smaller and hence for small farmers, the organic methods will be integrated nutrient supply and integrated pest management. I hope the National Project on Organic Farming will take into account these essential requirements for the spread of organic farming on a large scale. We should not forget that land is a shrinking resource for agriculture and that enhancement of productivity in perpetuity is the only method by which we can meet the food requirements of our growing population. Organic farming requires more scientific support than chemical farming."

1.15 The Ministry of Agriculture DAC furnished the following comments on the above observation of Dr. Swaminathan:—

> "Prof. has rightly indicated the need for replenishment of soil fertility (*i.e.* plant nutrients) and management of plant health under organic farming. As far as replenishment of nutrients is concerned, not only the production but quality of different organic manures needs to be essentially improved so that even smaller quantities of manures are able to supply nutrients in desired amount. Equally important is R&D related to bio-pesticides and weed control. It is apparent that focussed research support is very much needed to propagate organic farming in a scientific manner, without compromising on productivity. Crop and livestock integration as advised in the said letter is essentially required to adopt organic farming successfully, particularly under small holders' conditions. ICAR system needs to be sensitized for taking up the issues referred by Prof. Swaminathan under the Network Project on Organic Farming and other on-going projects like Integrated Farming Systems. However, as far as development part is concerned, these issues are being taken up under the Soil Health Management (SHM) component of National Mission for Sustainable Agriculture (NMSA) and more particularly under recently approved Paramparagat Krishi Vikas Yojana (PKVY). DAC has already proposed capacity building of farmers and also technology transfer to individual farmers for production of different inputs. Over and above, the major concern of domestic certification system will now be addressed

through Participatory Guarantee System (PGS) wherein certification will be done by farmers' clusters. This is the big initiative taken by DAC to promote organic farming at large scale across the country."

1.16 Responding to a query as to whether the conversion to organic agriculture will have any adverse impact on the food security and also on nutrition aspect of organic produce, Ministry of Agriculture (Department of Agriculture and Cooperation) submitted as under:—

"As per trial results of Network Project of ICAR, immediate conversion of lands/soils to organic production system may lead to yield losses during the initial 3 to 4 years. However, yield and income loss in the initial years can be minimized by adopting a gradual approach "towards organic" implying progressively increasing organics and reducing inorganics.

Furthermore, organic agriculture is usually compared with conventional production systems which receive 100 % recommended quantity of major nutrients. Ideally, organic agriculture yield should be compared with the yield obtained under farmers' system of production. Nutrient application gaps between farmers' practices and recommended package have been reported for major food crops namely rice, wheat and maize. The farmers are resorting to under application of nutrients due to various factors such as affordability, availability and knowledge. Once, farmer resorts to application of organic manures and recycling of residues, balanced supply of nutrients to crops can be ensured. Studies clearly indicate that in case of paddy and maize, there will not be any decrease in production due to moving towards organic farming but the production will increase.

Higher content of antioxidants under organic management than conventionally grown crops is possible due to the uptake of micronutrients with application of sufficient quantities of organic manures. Despite lower crop yields during the conversion phase, uptake of micro nutrients was higher under organic management for most of the crops under Network Project on Organic Farming (NPOF)."

1.17 Allaying the apprehension that productivity and cost of organic farming may not compare favourably with those of inorganic farming Dr. Vandana Shiva, interacting with the Committee on 09 February, 2015 submitted as under:—

"We have also done the revenue difference based on that productivity. On an average, there is a difference of 33,000 per acre of higher net income for organic farmers. A lot of farmers go into for chemical farming because of the illusion of the gross income....Net income is to subtract the cost of production from the income you get. That is why, I said that we should not develop and that is why the mission was incomplete because organic farming is not just about purchase of bio fertilisers but building up the soil fertility through green manures which a farmer can plant themselves through composting in the farm itself, through intercropping with nitrogen fixing crops like pulses.....Not only it is giving us more nutrition, solving the problem of severe malnutrition and hunger, it is also

addressing the problems of rural poverty and negative incomes because of cost being higher than what farmers can earn. On an average, I have noticed that if the seeds are purchased and intensive chemicals are used, cost of production is becoming ten times more. Usually cost of production is higher than the MSP in most crops in most regions.....The chemical fertilisers subsidies do not show up in the agriculture budget because they come up from the Fertiliser Ministry. But that is nearly Rs. 75,000 crore. They had hit a Rs. 100,000 crore in 2008 when fertiliser prices went up. That is a huge amount of money to ruin our soils and destroy our ability to deal with climate change which will show up in increased occurrence of drought and therefore, not only do we need our soils to be able to have climate insurance."

1.18 In response to a query regarding the impact of productivity due to switching over to organic farming from inorganic farming, Dr. Mangala Rai, former Secretary, Department of Agricultual Research and Education (DARE) and DG, ICAR while appearing before the Committee on 10 March, 2015 submitted as under:—

"Hon'ble Chairman, Sir, you have raised very appropriate contemporary questions. You have raised the first questions that people say that the production is reduced in organic farming. As far as I know, the Sun is the only source of energy and the plant converts this energy into various products through photosynthesis, be it a vegetable, a fruit, a flower, wheat or paddy and this it is a conversion of solar energy into chemical form of energy. Plant needs energy in the form of Nitrogen, Phosphorus, Potash, micronutrient or secondary nutrients to convert this energy and when the plant gets it, its capacity to convert energy increases. Therefore as per my common sense, if a plant gets everything in organic farming what it is needed to convert the energy, thus why the production will reduce. I am unable to understand it. Experiments have been conducted in this regard for many years."

1.19 Responding to the concern of the Committee that productivity of organic and conventional farming in terms of yield per acre as a benchmark comparison is misleading and the actual comparison lies in comparing quantities of different soil nutrients produced by the two systems of farming, the Ministry of Agriculture in their written reply stated as under:—

"Available information with DARE shows that the uptake of nutrients such as N, P, K and micronutrients such as Fe, Cu, Zn and Mn by crops in the economic produces were higher under organic farming practice than under conventional system of production. The increase in uptake was more in micronutrients mainly due to the increased supply of micronutrients when organic manures are applied. However, study on comparison of organic farming crops was and conventional farming crops based on nutrition produced per acre has not been done."

1.20 The Ministry in their written replies to a point regarding competitiveness of organic farming submitted that Organic Agriculture needs to be promoted in areas with crop diversification, supplementing the nutrients by on-farm wastes. To begin with,

strategically, organic farming can be focussed on the following three areas with competitiveness:—

(a) Areas with crops of higher market potential when produced organically,

(b) Areas with already active organic farmers groups, especially small and marginal farmers,

(c) Regions/Areas of high biodiversity and ecologically fragile regions.

1.21 The money spent on subsidies on chemical fertilizers as furnished by Ministry of Agriculture (Department of Agriculture & Cooperation) is as follows:—

Year	Total Subsidy on chemical fertilisers (Rs. in crore)
2005-06	19389.64
2006-07	28019.55
2007-08	43319.16
2008-09	99494.71
2009-10	64032.29
2010-11	65836.68
2011-12	73790.94
2012-13	70592.10
2013-14	71280.16
2014-15	75067.31

1.22 Present policy of subsidy on fertilisers is focussed towards making available chemical fertilisers to farmers on highly subsidized prices. This has led to inclination of farmers towards more and more use of chemical fertilisers. Department of Agriculture & Cooperation has been promoting balanced use of organic and inorganic fertilisers for Soil Health Management. The Ministry admitted that there is a lot of debate and discussion on the need to focus on both inorganic and organic fertilisers equally. There is a need to move towards direct cash transfer to farmers on unit area basis so that farmers are free to choose between chemical fertilisers and organic fertilisers.

Policy framework for promotion of organic farming

1.23 Suggesting that Government's policy making focus and investments on organic agriculture should be more capital based rather than revenue based and investment may be made to make the sector self reliant, debt free, zero government support, a representative of Fort Williams Organic Farms Mumbai, submitted as under:—

"Organic Farmers should not have to depend on inputs from the corporate sector or other suppliers in such a way which will keep them at the mercy of a possible Oligopoly.

Any proposed policy intervention should lead to organic farmers becoming eventually debt-free or at very low levels of debt, that too, from banks or state-run FI's so as to prevent any burden on the fisc in future and also to prevent bankruptcy, suicides, etc.

The proposed policy should ensure that there are no bail-outs, subsidies, etc. for Organic Farmers as is in the case of chemical farmers, except in rare and extreme circumstances, such as famine, etc.

Same or better yield, same or lower cost, better nutrition."

1.24 Explaining the strategy for implementation of the programmes for promotion of organic farming, the representative stated as under:—

"This proposal, in order to achieve greater adoption of organic farming in the country, envisages implementation first in experimental clusters and then an expansion in the area covered under these clusters. Thus, a very organic method of implementation.

- Devise and implement a Model Organic Conversion & Handholding [MOCHA] Project based on organic farming experience already available in this field.
- Identify geographic clusters & villages which are in need of rescue/revival due to overuse of chemicals or any other reason, across diverse climatic and soil zones.
- Create a Public - Private - NGO - Farmers' Co-operative [PPNC] partnership where:
  - (A) A single player or a consortium of PNC [Private player, NGO, Cooperative] comes to the government for declaration as a MOCHA Cluster Project.
  - (B) If the government finds it suitable, based on parameters to be set up, it can declare the Project as an Approved MOCHA Project.
  - (C) The Government shall then sanction a "Conversion Fund" for the project based on the Project Report received by it from the stakeholders. The "Conversion Fund" may be either Capital Subsidy or an interest-free Loan or partly both.
  - (D) Within a fixed time-frame, the entire cluster has to achieve certain financial, output and soil fertility parameters for the Project to be considered successful. A successful project would result in the NGO/Private player being awarded more such Projects."

1.25 Dr. Sirohi, Samaj Vikas Sansthan, Meerut submitted to the Committe the following strategy for promoting organic farming:—

"Potential zones needs to be identified on the line of 'Special Economic Zone' and be named 'Special organic farming system zone'. For example, potential exists for creation of 'Organic Spice' zone in Kerala, 'Organic Coconut zone' in

Nicobar district of Andaman and Nicobar Islands, 'Organic Basmati rice zone in Uttarakhand, Haryana and Punjab, Hi-value vegetables in selected States, tuber and special root crops in North Eastern Hilly (NEH) region and seed spice zone in Rajasthan and Gujarat. These zones can also be made as Agro-eco tourism centres for attracting the eco tourists. Tax holidays for private players who are investing in the zone should be given. The zone should be planned such a way that all the input required for organic farming are produced within the zone by setting up the organic manure, bio-fertilizer, bio-pesticide production units etc. Integrated organic farming system models should be developed in all the niche areas, which should serve as research-cum-demonstration unit. Cluster of villages can also be encouraged for organic farming depending upon the niche.

Organic farming package and its promotion for individual crops should be done away with. The system approach should be adopted. Cropping and farming system approach of providing required nutrient and other inputs are proved to be successful. 'Model Organic Farm' in farming system mode for marginal and small farmers should be developed in each district of identified States.

The approach of 'Towards Organic' should be adopted instead of immediately switching over to organic from inorganic. This approach will reduce the immediate heavy yield losses during the conversion period.

The budget for research and innovative organic input projects should be enhanced to generate valuable information. This will also provide impetus in organic farming research and documentation of ITKs, its testing, verification and popularization.

Capacity building followed by arranging critical inputs, implementation-cum-monitoring, linking with assured market using cluster approach will be a way forward for success of organic farming."

1.26 In a written note while replying to the matter of absence/lack of policy on organic agriculture asked by the Committee, Dr. Mangala Rai, retired agricultural scientist and Secretary to DARE and DG, ICAR submitted as under:—

"We need enhanced productivity, quality and sustainability on a long term sustainable basis, for some policy initiative we may like to see some elements of 'Save and Grow' — an FAO publication of 2011."

1.27 Dr. Mangala Rai further added:—

"A mass movement is essential for education, awareness generation, quality organic input production and their storage, transportation and effective application."

1.28 In the context of several countries today moving towards organic farming in a big way the ministry were requested to furnish (i) the stated position of the Government of India in this regard; and, (ii) whether the present Policy framework in India is

conducive for the purpose and the changes required, in a written reply, Ministry of Agriculture (Department of Agriculture & Cooperation) stated that:—

> "For promotion of Integrated Nutrient Management, DAC is focussing on balance use of fertilizers both organic and inorganic nutrients, in accordance with results of Long Term Fertilizer Experiments. Schemes of assistance are under implementation in DAC to promote the production of organic and bio inputs through State Governments, private entrepreneurs and on-farm production by farmers. Along side certified organic farming is encouraged and assisted through NMSA and NPOP. Several States have formulated policies to support certified organic farming. Thus the present policy advocates balanced use of nutrients for food production and provides assistance for organic and inorganic input availability. It promotes both Conventional Farming and Organic Farming through its scheme and research programmes to disseminate benefits and issues that may arise in Conventional Farming and Organic Farming.
>
> Present policy of subsidy on fertilisers is focussed towards making available chemical fertilisers to farmers on highly subsidized prices. This has led to inclination of farmers towards more and more use of chemical fertilisers. Department of Agriculture & Cooperation has been promoting balanced use of organic and inorganic fertilisers for Soil Health Management.
>
> There is a lot of debate and discussion on the need to focus on both inorganic and organic fertilizers equally. There is a need to move towards direct cash transfer to farmers on unit area basis so that farmers are free to choose between chemical fertilizers and organic fertilizers."

1.29 The Ministry of Agriculture (Department of Agriculture & Cooperation) furnished the following mechanism for enabling promotion and facilitation of organic farming:—

(i) Certification of organic process in the clusters through Participatory Guarantee System for domestic purpose and under NPOP for export.

(ii) Formation and development of Farmer Producer Organization from clusters of 50 acres with 50 or more farmers. Per farmer support shall be restricted to maximum of one acre only.

(iii) Identification of crops and areas.

(iv) Training on organic farming to encourage and motivate the farmers, on Organic Farming Techniques (giving emphasis on crop residues management and enhancement of organic carbon), input production techniques, Participatory Guarantee System and marketing of produce.

(v) Creation of vermicompost, vermi-hatcheries and traditional input production units in cluster and agro-farm waste compost units for recycling of farm waste and biofertilizer units to cater the cluster at District level.

(vi) Branding, Packing and labelling of certified organic produce.

(vii) Promoting marketing and awareness through exhibitions/fairs/Radio Programmes, Kisan melas etc.

CHAPTER II

NATIONAL PROJECT ON ORGANIC FARMING

Realizing the growing potential of organic farming in the country, Ministry of Agriculture (Department of Agriculture and Cooperation) launched a National Project on Organic Farming (NPOF) with an outlay of Rs. 57.05 crore as a pilot project with effect from 01.10.2004 (X Plan). The project was continued in 11th Plan with an allocation of Rs. 101.00 crores. During 12th Plan, Planning Commission took a decision to implement only 7-8 missions, instead of separate schemes. Therefore, the National Project on Organic Farming has been subsumed under 'National Mission on Sustainable Agriculture' with the following aims and objectives:—

(i) To encourage production and use of organic and biological sources of nutrients like biofertilizers, organic manure, compost for sustained soil health and fertility and improving soil organic carbon. To promote production and use of biopesticides, bio-control agents, etc. as alternative inputs in organic farming.

(ii) To act as nodal agency for implementation of quality control regime for biofertilizers and organic fertilizers, as per the requirement of FCO.

(iii) To formulate and define standards of other unregulated organic and biological inputs and create database on their quality status, define/ upgrade standards and testing protocols and bring them under quality control mechanism.

(iv) Develop, maintain, undertake regular efficacy testing and ensure steady supply of mother cultures of biofertilizer and other beneficial microorganisms for nutrient mobilization and plant protection to the biological input production industry.

(v) To run short term certificate courses on organic system and on-farm resource management.

(vi) To organize regular trainings and refresher courses for State Governments' quality control analysts/inspectors associated with implementation of FCO.

(vii) To impart trainers' training on certification systems, organic management, input production and on other related aspects to certification and inspection agencies, extension agencies, farmers, industries and organizations engaged in the production, and promotion of inputs and organic farming.

(viii) To initiate research on validation of established indigenous practices, inputs and technologies leading to development of package of practices.

(ix) To initiate studies/ surveys on biological soil health assessment under different farming systems, practices or states.

(x) To act as central information and data collection centre on all aspects of organic farming and dissemination of information through print and electronic media.

(xi) Publication of training literature, Quarterly Organic Farming Newsletter, Half yearly Bio fertilizer Newsletter and validated and documented indigenous practices.

(xii) Technical support to existing certification systems in terms of standards formulation, designing implementation protocols, evaluation and surveillance. Policy, implementation and surveillance support to alternative farmer's group centric low-cost certification system such as PGS.

(xiii) Awareness creation through seminars/conferences/trade fairs and publicity through print and electronic media.

(xiv) Support Central and State Governments in evaluation, and monitoring of various organic agriculture schemes."

2.2 In written reply to queries on (i) the reasons for effecting these changes and (ii) whether the restructuring affected the fund allocation for NPOF as compared to when it was a standalone programme during the previous years, the Ministry of Agriculture (Department of Agriculture & Cooperation) submitted that:—

"During 12th Plan, Planning Commission took a decision to implement only 7-8 missions, instead of separate schemes. Therefore, the National Project on Organic Farming has been subsumed under National Mission on Sustainable Agriculture."

2.3 Furnishing views on subsumption of National Project on Organic Farming (NPOF) under National Mission for Sustainable Agriculture (NMSA), Dr. Mangala Rai, Former Secretary, DARE and DG, ICAR , stated as under :—

"A mission has to be essentially an end to end event within specified time frame and monitorable targets. This basic element is not given due consideration."

Components/Schemes/Programmes of Organic Farming

2.4 The Ministry of Agriculture promote various components of organic farming through various programmes *viz*. National Mission for Sustainable Agriculture (NMSA), Mission for Integrated Development of Horticulture (MIDH), Rastriya Krishi Vikas Yojana (RKVY) and 'Network Project on Organic Farming under ICAR'. However, the Ministry admitted that these efforts have, so far been disjointed due to which we have not yet managed to achieve the outcome envisioned when these schemes were conceptualized. Therefore, the existing components of organic farming have been proposed to be put together under a programme called 'Paramparagat Krishi Vikas Yojana' to be implemented in a cluster mode.

Availability of Bio-inputs and other related matters

2.5 The Ministry of Agriculture (Department of Agriculture and Cooperation) admitting the shortage of bio-fertilizers, in a written note stated as under:—

> "The present requirement of bio-fertilizer is 4,26,000 metric tonne (MT) against which total supply is 65,528 metric tonne (MT) . For organic manures, the total requirement is 710 million tonnes and supply is 105 million tonne. However, production of bio-fertilizer has increased due to effective implementation of capital investment subsidy scheme for establishment of production units for bio-fertilizers during the last three years.

Actual production of bio-fertilizers in MT during years

2011-12	2012-13	2013-14
40324.21	46836.82	65527.87

2.6 Asked whether the Government were taking required steps to ensure that the supply of bio-inputs matches the demand for the same, the Ministry of Agriculture (Department of Agriculture and Cooperation) stated as follows:—

> "To cater to the demand for bio-fertilizer/bio-pesticides, organic manure and vermin compost units/organic input production, financial assistance is available under MIDH and NMSA. The component-wise pattern of assistance is given in **Appendix - I & II.**"

Status on demand and supply of bio-pesticides

2.7 The data on State-wise and year-wise consumption of bio-pesticides since 2010-11 as furnished by the Ministry of Agriculture (Department of Agriculture and Cooperation) is as under:—

Table 2.7: State-wise consumption of bio-pesticides

Sl. No.	State/UTs	2010-11	2011-12	2012-13	2013-14
1.	Andhra Pradesh	27	22	1	77
2.	Bihar	153	203	222	243
3.	Chhattisgarh	50	80	129	182
4.	Goa	322	1	0.36	1
5.	Gujarat	NA	NA	1780	605
6.	Haryana	NA	49	NA	NA
7.	Himachal Pradesh	64	80	80	95
8.	Jammu & Kashmir	NA	NA	NA	0.04
9.	Jharkhand	3	1	1	1
10.	Karnataka	NA	307	315	450
11.	Kerala	NA	136	481	626

Sl.No.	State/UTs	2010-11	2011-12	2012-13	2013-14
12.	Madhya Pradesh	NA	194	187	160
13.	Maharashtra	1156	1518	1033	1433
14.	Odisha	365	312	277	277
15.	Punjab	8	42	47	334
16.	Rajasthan	70	88	78	61
17.	Tamil Nadu	209	222	247	257
18.	Uttar Pradesh	1325	20	38	41
19.	Uttarakhand	37	27	21	20
20	West Bengal	665	550	720	650
Sub-Total		4453	3851	5657	5513
Eastern-North					
21.	Arunachal Pradesh	NA	NA	NA	NA
22.	Assam	24	87	143	150
23.	Manipur	1	2	2	1
24.	Meghalaya	1	NA	18	23
25.	Mizoram	12	12	12	12
26.	Nagaland	NA	9	NA	25
27.	Sikkim	NA	NA	NA	NA
28.	Tripura	11	163	78	
Sub-Total		48	273	252	211
Union Territories					
29.	Andaman & Nicobar	NA	405	750	NA
30.	Chandigarh	NA	NA	NA	NA
31.	Dadra & Nagar Haveli	NA	NA	NA	NA
32.	Diu & Daman	NA	NA	NA	NA
33.	Delhi	9	NA	NA	NA
34.	Lakshadweep	NA	NA	NA	NA
35.	Puducherry	642	642	19	10
Sub-Total		651	1047	769	10
Grand Total		5151	5171	6679	5734

2.8 On the adverse impact of shortage of bio- inputs on the growth of organic farming, the Ministry of Agriculture (Department of Agriculture and Cooperation) submitted:—

> "State Governments estimate the requirement of bio-fertilizers/organic manure and prepare project proposals to be considered by Project Sanctioning Committee (PSC) under NMSA. Organic farming is a production system that relies primarily on local resources and on-farm inputs such as compost, manure

and bio-pesticides, cultivation of legumes and biological waste control. In the organic projects implemented by States on-farm production of organic inputs is included along with available bio-fertilizer/bio-pesticides so that nutrient availability is adequate."

Cost Benefit Analysis of inputs

2.9 In response to a query as to whether any study/analysis has been carried out to ascertain the cost of inputs for organic agriculture and conventional agriculture as well as the approximate value of the output per unit of land in a specific agro-climatic zone and if so, the details thereof, the Ministry of Agriculture (Department of Agriculture and Cooperation), stated as under:—

"Charyulu and Biswas (2010) undertook a study of cost of inputs and outputs in organic and conventional agriculture in few selected States. The results (after a conversion period of three years) indicate that in Punjab, the cost of production per quintal of cotton under Organic Farming (OF) was Rs. 662 while in case of Conventional Farming (CF) it was Rs. 1112. The cost of production was almost 40% lower than CF. However, in another study on costs and returns of paddy (basmati) cultivation in Uttar Pradesh, the average cost of production per quintal of paddy (basmati) under OF was Rs. 870 while the same in CF was Rs. 803. The cost of production per quintal under OF was 8% higher than CF, owing to higher costs of manures and weeding, implying that costs of production will be crop dependent. Details of the study may kindly be seen below:

Economics of Cotton Cultivation in Punjab (Rs. per acre)

Items	Organic Farming	Conventional Farming
1	2	3
Land preparation	967	850
Seed cost	125	1250
Sowing cost	150	125
Fertilizer/manure cost	333	2250
Inter-cultivation/Weeding	1332	650
Plant protection cost	33	4550
Irrigation cost	380	150
Harvesting cost	1967	2500
Threshing cost	0	0
Marketing cost	140	130
Other costs	0	0
Total cost of cultivation	**5427**	**12455**
Yield (kg.)	825	1125
Price (Rs.)	28	28.5
Fodder (Qtl.)	0	0
Price (Rs.)	0	0

1	2	3
Total revenue	**23100**	**32063**
Net returns	**17673**	**19608**
Cost of production (per Qtl.)	662	1112

Note: The costs and returns of cotton cultivation from sample organic as well as conventional farmers were collected during the cropping year 2009-2010 in Punjab. Many of the sample organic farmers were cultivating *desi* variety of cotton whereas conventional farmers were growing Bt. cotton varieties.

Economics of Paddy Cultivation in Uttar Pradesh (Rs. per acre)

Items	Organic Farming	Conventional Farming
Land preparation	3482	3444
Seed cost	501	511
Sowing cost	1136	1400
Fertilizer/manure cost	1082	930
Inter-cultivation/Weeding	622	375
Plant protection cost	350	521
Irrigation cost	2281	3300
Harvesting cost	2082	2214
Threshing cost	1555	1671
Marketing cost	140	80
Other costs	0	0
Total cost of cultivation	**13231**	**14446**
Yield (kg.)	1518	1807
Price (Rs.)	15.8	16.9
Fodder (Qtl.)	10.5	11.8
Price (Rs.)	70	93
Total revenue	**24719**	**31636**
Net returns	**11488**	**17190**
Cost of production (per Qtl.)	**870**	**803"**

Note: The primary data on sample organic and conventional paddy cultivation was collected from Uttar Pradesh pertains to the cropping year 2009-2010. Most of the sample organic farmers are practicing the method of 'Natural farming' or Zero-budgeting concept in their farms. The most common basmati varieties growing in this region are Pusa-1 and Pusa-1121.

Shortfall in Bio-fertilizers and Organic Manures

2.10 The Ministry of Agriculture (Department of Agriculture and Cooperation) also stated that as on 10.12.2014 requirement of bio-fertilizer was 4,26,000 metric tonnes as against which total supply was only 65,528 metric tonnes. For organic manures, the total requirement is 710 million tonnes and the supply is only 105 million tonnes. In written reply to a query as to how the Government propose to meet the shortfall, the Ministry stated as follows:—

"Under NMSA, there is a provision of subsidy for establishment of production units of bio-fertilizers/bio-pesticides and fruit/vegetable market/agro-waste compost production unit under Capital Investment Subsidy Scheme (CISS)

through NABARD, to increase production of organic inputs. In case of State Governments, the assistance is hundred per cent. Apart from schemes of assistance to States and private agencies, there is assistance for on-farm production of organic inputs to farmers under NMSA, MIDH and National Food Security Mission (NFSM) that can contribute to availability of inputs."

Assistance in marketing of Bio-inputs

2.11 The Ministry of Agriculture (Department of Agriculture and Cooperation) furnishing their reply on the suggestion of a stakeholder that assistance in marketing and distribution of bio-inputs through Government owned network of institutions and/or Cooperative societies at village level will go a long way in promotion of organic agriculture, stated as follows:—

"Some State Governments like Madhya Pradesh, Uttarakhand etc. are implementing a marketing strategy for distribution of organic inputs (bio-fertilizers/ bio-pesticides etc.) through the cooperative societies at village level to stake-holders. The feasibility of introducing the strategy across all the States will depend on the strength of the local cooperative societies. Conceptually, the strategy has merits in reaching large number of farmers through existing network of institutions."

Institutional/Organizational issues

2.12 Presently, organic farming is promoted through the following Ministries:—

Ministry of Commerce

(i) National Programme for Organic Production (NPOP).

(ii) National standards for organic products and processes & accreditation of Certification Agencies.

Ministry of Agriculture

(i) National Project on Organic Farming (NPOF) (2004).

(ii) National Centre for Organic Farming (NCOF) along with Regional Centres of Organic Farming under NPOF.

(iii) Network Project on Organic Farming (NePOF) under ICAR.

Coordination among various Ministries and also within the M/o Agriculture

2.13 In reply to a query as to whether there is any coordinating mechanism among Ministries of (i) Agriculture (D&AC and DARE), (ii) Commerce & Industry, (iii) Finance, various State Governments, etc. for promoting and for giving strategic direction to growth of organic agriculture, the Ministry of Agriculture (Department of Agriculture and Cooperation) replied:—

"Bi-annual interface coordination between DAC and DARE provides the forum for discussing research. Network Project on Organic Farming (NePOF). Technology packages developed under NPOF are transmitted to DAC for upscaling. Collaboration also exists between National Centre for Organic Farming and ICAR-IIFSR for conducting the trainings and certificate courses.

Also, under the National Programme for Organic Production (NPOP), there is a National Steering Committee which comprises of representatives from different Ministries including DAC for effective implementation of NPOP."

2.14 With respect to the standing mechanism to secure coordination among ICAR, Krishi Vigyan Kendras (KVKs) and agricultural universities for promoting organic agriculture, Ministry of Agriculture (Department of Agriculture and Cooperation) stated as follows:—

"ICAR is promoting research and development on organic farming through a Network Project on Organic Farming (NePOF) involving 11 State Agricultural Universities, 8 ICAR institutes/centres and 1 deemed to be/special heritage university, since 2004. The details of the network centres are given below:—

Table 2.14: The list of Network Centres established under Network Project on Organic Farming (NePOF)

Sl.No.	State	University/Institute	Location
1.	Chhattisgarh	Indira Gandhi Krishi Vishwavidyalaya	Raipur
2.	Gujarat	Sardar Krushinagar Dantiwada Agricultural, University	S.K. Nagar
3.	Himachal Pradesh	CSK HPKVV Hill Agri. Res. & Extn. Centre	Bajaura
4.	Jharkhand	Birsa Agricultural University	Ranchi
5.	Kerala	ICAR-Indian Institute of Spices Research	Calicut
6.		ICAR-Central Tuber Crops Research Institute	Trivandrum
7.	Karnataka	University of Agricultural Sciences	Dharwad
8.	Madhya Pradesh	Jawaharlal Nehru Krishi Viswa Vidyalaya	Jabalpur
9.		ICAR-Indian Institute of Soil Science	Bhopal
10.	Maharashtra	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth	Dapoli
11.	Meghalaya	ICAR Research Complex for NEH Region	Umiam
12.	Punjab	Punjab Agricultural University, Ludhiana	Ludhiana
13.	Rajasthan	Maharana Pratap University of Agriculture & Technology, Udaipur	Udaipur
14.		ICAR-National Research Centre on Seed Spices	Ajmer

Sl.No.	State	University/Institute	Location
15.	Sikkim	ICAR Regional Centre, Sikkim of ICAR Research Complex for North-Eastern Hill Region	Sikkim
16.	Tamil Nadu	Tamil Nadu Agricultural University	Coimbatore
17.	Uttarakhand	G.B.P. University of Agriculture and Technology	Pantnagar
18.		ICAR-Vivekananda Parvatiya Krishi Anusandhan Sansthan	Almora
19.	Uttar Pradesh	ICAR-Project Directorate for Farming Systems Research	Modipuram
20.	West Bengal	Ramakrishna Mission Vivekananda University (RMVU)	Narendrapur

The NPOF centres are also involved in promoting organic agriculture through capacity building of stakeholders under different schemes such as Tribal Sub-Plan. Also, collaboration exists between NPOF and Krishi Vigyan Kendras (KVKs) to upscale the package of practices for organic production. Besides, most of the KVKs are under the State Agricultural Universities (SAUs) and all programmes including that on organic farming being taken up by the SAUs are implemented in the KVKs also."

Information dissemination/ coordination mechanism

2.15 Furnishing details of the coordination mechanism between the stakeholders like Central Agriculture Research bodies, State Agricultural Universities, Central Department of Agriculture and Cooperation in the Centre and State Departments of Agriculture in States to share the research findings and facilitate the same to reach farmers , Ministry of Agriculture (Department of Agriculture and Cooperation) stated as follows:—

"the ICAR discusses all agricultural related issues and technologies developed including organic farming in Regional Committee meetings organized by the council attended by both Central and State officials and SAUs. Besides, all these aspects are discussed in DAC-ICAR interface meeting subsequently with State officials during Rabi and Kharif conferences."

Need or otherwise of separate department for Organic Agriculture

2.16 With regard to the views of the Government on creation of a separate Department for Organic Agriculture to give impetus to conversion to Organic agriculture, the Ministry of Agriculture (Department of Agriculture and Cooperation) stated as under:—

"In order to promote commercial organic farming in North-Eastern States, Government has allocated special budgetary provision for DoNEAR with intention that the Department will adequately focus on the development of

organic farming in the region. Presently 14 States have formulated schemes/ policies to support organic farming in their states. Since the implementing agencies are State Governments, there may not be any need for a separate Department."

Involvement of Panchayats to promote Organic farming

2.17 In written reply to a query as to whether any State Government(s) is/are involving Panchayats for promoting Organic Agriculture, and if so, the details incorporating *inter-alia* the impact of involvement of Panchayats on expansion of organic agriculture, the incentives offered to Panchayats, if any, etc., the Ministry of Agriculture submitted:—

"NCOF is organizing farmer's training and field demonstration programme in total 593 villages during 2015-16 and 2016-17 in villages adopted by Members of Parliament under Saansad Adarsh Gram Yojana (SAGY). The State Government officials' /ATMA/ gram panchayats will also be involved in such programme."

2.18 While addressing the apprehension of the Committee about any possible road blocks in the Government or in the ICAR or in the Ministry of Agriculture, which may be hampering/preventing organic farming, Dr. T.C. Chaudhary, a retired agricultural scientist deposed before the Committee as under:—

"Sir, lack of integration of the Government mechanisms, I consider, is one of the flaws. Integration means, ICAR, KVKs, Agricultural Universities—everybody is working on package development and formulation development of organic produce. Linking them and translating those things in the name of transfer of technology and through demonstration to the farmers are required. That area is very much lagging. Individually, everybody is doing a very good job. They have to be linked and translated with full responsibility and monitoring systems at the grass root level. Otherwise, the farmers will not pick up and the message will not go."

Capacity Building

2.19 The Ministry of Agriculture (Department of Agriculture and Cooperation) in their background note on the subject stated that for popularization of organic agriculture, there is a need to establish separate departments under State Agricultural Universities (SAUs) where diploma/degree courses on organic agriculture can be conducted. For this purpose assistance as Grants —In Aid shall be provided to SAUs against specific proposal from SAUs. It is proposed to establish 8 such departments in various universities during 12th Plan period.

2.20 Asked about the action plan chalked out to set up separate Departments under State Agriculture Universities to offer degree/ diploma course on organic farming, the Ministry of Agriculture (Department of Agriculture and Cooperation) stated as follows:—

"There is a Network Project on Organic Farming with 20 centres working on organic agriculture in various agricultural universities/institutes. However, as

per Education Division of ICAR, presently, there is no specific proposal to set up separate Departments under State Agricultural Universities to offer degree/ diploma course on organic farming."

2.21 In response to a query on the progress made on organic farming research and its extension from lab to farmland/farmers in the country and the role played by these research centres in this regard, the Ministry of Agriculture (Department of Agriculture and Cooperation) stated as follows:—

"Indian Council of Agricultural Research (ICAR) under Network Project Programme on Organic Farming (NPOF) with the objective to develop package of practices of different crops and cropping systems under organic farming in different agro ecological regions of the country. Presently, the project is running at 20 cooperation centres including SAUs. So far, package of practices for 18 crops/cropping systems have been developed and uploaded in website of Project Directorate for farming Systems Research, Modipuram. Training and FLDs are organized to educate farmers on various aspects of organic farming."

2.22 The Ministry of Agriculture (Department of Agriculture and Cooperation) further added as under:—

"Presently, the project is running at 13 Cooperative centres including SAUs, spread over 12 States. Organic farming packages of practices for 14 crops namely basmati rice, rainfed wheat, maize, red gram, chickpea, soyabean, groundnut, mustard, Isabgol, black pepper, ginger, tomato, cabbage and cauliflower has been developed and uploads in Project Directorate for Cropping Systems Research (PDCSR) website."

2.23 Regarding the collaboration with Research Centres abroad the Ministry of Agriculture (Department of Agriculture and Cooperation) stated that the collaboration with research centres abroad is explored time to time under various work plans developed with different countries.

2.24 The Ministry of Agriculture (Department of Agriculture and Cooperation) detailed the following steps/efforts taken/being taken by NCOF and six RCOFs to augment capacity building for organic farming:—

International Trainers' training/cooperation and liaison with international bodies

This being an exclusively new field with practically little expertise in the country, training of officers from DAC, NCOF, State agencies (involved with organic agriculture implementation programme), certification agencies and scientists from ICAR and SAUs (working for development of organic package of practices since last 3 years) are required to be given an international exposure. This also includes the need based visit of foreign experts to India and Indian executive officers/technical experts to different countries to create awareness about Indian organic produce, attend seminar/conferences, participate in exhibitions and develop liaison with international bodies on organic agriculture. Visit by select group of officers from DAC and NCOF to BioFach, Nuremberg and other such events, can also be useful in learning international trends in organic agriculture.

Certificate Courses

Certificate Course on organic farming—To create first generation organic agriculture extension workers and field workers in the field of organic farming and to create a rural force of soil testing entrepreneurs through rapid soil testing kits it is proposed to conduct one month certificate courses on organic production practices, on farm input management, certification process (third party and PGS both), documentation, post harvest processing, storage and marketing. The course will be open for rural youth having Degree/Diploma in Agriculture/Science with Biology, SAUs/Educational institutes can also sponsor their undergraduate students for such courses.

Training/Refresher course on production and quality control of organic inputs — To update the analytical skills, sample collection and handling requirements of State Government officers/personnel from organic inputs production units on quality analysis requirement as per FCO for biofertilizers and organic fertilizers and to transfer appropriate production technology to personnels associated with the production of organic and biological inputs, 10 days training/refresher courses are proposed.

Trainers trainings—To create a cadre of organic agriculture trainers it is proposed to organize five days customized trainers training courses for Fertilizer inspectors, Senior level extension officers, KVK trainers, NGO trainers, PGS Regional Council members and technical staff of production and quality control units etc. on FCO, certification systems, PGS operational strategy, organic management, production and quality control of organic inputs.

Training of Field Functionaries/Extension Officers on Organic Farming, PGS India programme, soil health management and for input dealers on quality control—As organic farming and sustainable soil health management practices are primarily on-farm management practices, to disseminate appropriate management protocols to field functionaries and extension officers, working in both Government and NGO sector, two days training courses are proposed."

2.25 In response to a query as to whether any institution of Department of Agricultural Research and Extension (DARE) or any Indian university/Institute introduced a course on Organic Farming/ Agriculture as a part of efforts to provide qualified manpower for Organic Agriculture in India, the Ministry of Agriculture (Department of Agriculture and Cooperation) stated as follows:—

"Yes, ICAR-Indian Agricultural Research Institute, New Delhi has a course on:

(i) Principles and Practices of Organic Farming (AG604) with 2+1 credit hours at post graduate level.

(ii) Some of the State Agricultural Universities (SAUs) are also offering courses on organic farming at post graduate level. In fact, three State Agricultural Universities (SAUs) *viz.*, CSKHPKVV, Palampur, UAS-Dharwad and TNAU, Coimbatore are having separate departments for carrying out research on organic farming and sustainable agriculture.

(iii) Indira Gandhi National Open University is offering a certificate course on organic farming.

(iv) Amity Institute of Organic Agriculture (AIO) under Amity University, Noida is offering MSc (Organic food production and certification) and PhD (Organic Agriculture) degrees.

(v) National Centre for Organic Farming, Ghaziabad is conducting certificate courses on organic agriculture on a regular basis.

APEDA has supported IGNOU for introducing a certificate course on organic farming. This course has been implemented by IGNOU since 2009."

2.26.1 Appreciating the concern of the Committee about the current dearth of extension services for spreading the organic farming, Dr. Mangala Rai, former Secretary, DARE and Ex-DG, ICAR in a written note submitted as under:—

"Extension services are certainly poor. Many NGOs are also not better. Hence, extension services in our country require a fresh look."

2.26.2 Referring to the stakeholders view that dearth of extension services is one of the factors impeding the spread of the organic farming and accordingly suggestion for enlarging the scope of work of the agricultural extension services by focussing on organic agriculture through collaborative engagement with NGOs who are actively working in the rural areas, Ministry of Agriculture (Department of Agriculture and Cooperation) were requested to furnish their views. They, accordingly, in a written reply submitted as under:—

"Agricultural extension services play an important role in popularization of organic agriculture and therefore, necessary arrangement for making visit of successful organic farmers will motivate farmers. Further, the KVKs in the country can document the successful organic growers' story and propagate through outreach activities. Special focus will be given to extension activities to propagate organic farming components under various missions."

2.26.3 Regarding the suggestion of the Committee to organize organic farmers into producer collectives like Self Help Group for better planning and managing their resources, value addition, marketing, etc., the witness stated as under:—

"Yes I agree. This would require a massive effort and support in technological back stopping, skill development, input delivery system and output marketing support."

Publicity and Awareness Campaign for Organic Farming

2.27.1 The Ministry of Agriculture (Department of Agriculture and Cooperation), in a written reply to a query, stated that National Centre of Organic Farming (NCOF) at Ghaziabad and six Regional Centres for Organic Farmings (RCOFs) organize various programmes for awareness *viz*., literature distribution, arranging exhibitions, radio talks in regional language, TV programmes and press releases.

2.27.2 The Ministry further explained the public campaign as under:—

"Awareness campaigns involving press, radio, television etc. should be made for popularising the benefits of consuming organic foods. DD Kisan channel can have dedicated time slots for organic growers.

A Media Plan aimed at spreading awareness about advantages of organic farming among farmers across India with a focus on green revolution belt is proposed as under:—

DURATION OF THE CAMPAIGN: ONE MONTH

Dissemination through media vehicle having extensive reach in area have to be used for this purpose prominently like DD network, AIR network, FM channel, Community Radio, C&S channel, Digital Cinema, SMS and regional and vernacular print media.

PRESS INFORMATION BUREAU (PIB)

It is proposed to mount a massive campaign through PIB network across the country. PIB will release features in English, Hindi Vernacular press and press releases may be issued time to time during the campaign period. In addition, through Public Information Campaign (PIC) a focussed message will be spread among the targeted audience about advantages of organic farming.

The publicity by PIB will be in complete coordination with the campaign to be mounted through DAVP.

PRINT MEDIA

In the initial phase there needs to be given main thrust on the publicity through regional vernacular press. Half page advertisement may be released on an interval of 15 days.

ELECTRONIC MEDIA

It is proposed that the maximum of insertions (12) has to be pressed during prime time and fewer insertions are required in the morning and day time. A total of 12 insertions are to be pressed for DD National, DD Regional channels, DD News, and C&S channels. In the C&S channels and DD National the best TRP programme may be identified by DAVP and maximum insertions may be pressed during the telecast of these popular programmes. Simultaneously, it is proposed to press 12 to 15 insertions per day in radio FM and AIR channels. Here also the channels can be identified on the basis of latest IRS survey. Now a days it is in the fashion to listen FM by mobile services which is a very forceful and impactful medium and the reach of the FM channel is almost in the radius of 50 KM and almost covers all the villages of India.

DIGITAL CINEMA

Similarly it is proposed to utilize the network of digital cinema at State capital, district centers, Tehsil and block levels. This medium is very forceful to be used for the rural people.

VIDEO VANS

It is also proposed to give publicity through interactive mobile display vans, which will travel and have programmes from village to village educating the farmers on advantages of organic farming. The programme may include display of messages on the vans having interaction with farmers, running video and documentaries/short films etc. Through this medium feedback may also be gathered from the field, which may be utilized by the Government to improve that programme. Side by side the services of DFP through its 207 field units across the country, by way of publicity programme can be utilized.

EXHIBITION

The services of DAVP exhibition wing will also be utilized for spreading the awareness messages through various exhibitions.

HOARDINGS

It is proposed to put up hoardings highlighting the essential message at Block/ Gram Panchayat level."

2.27.3 Responding to the concerns of the Committee as to how organic farming can be popularized among the farmers, Dr. Vandana Shiva an expert submitted the following:—

"As far as awareness is concerned, I am extremely disappointed that it is assumed that training in organic will be a small activity left to a few NGOs and they have even shut down the national centre on organic farming, which did not do everything but it did a little bit. I would suggest that just as we have for every item in the agriculture Budget we should have a table for everything that the chemical farming needs, organic farming needs even more. University should be having courses on this. Around the world there are courses, around the world there are universities. They are dedicating training in organic farming. We do not have single agricultural university that offers a degree..... So, basically we need to stop treating organic farming as an orphan and we need to start treating it as an equal sioling. When it is given equal treatment, it will actually outdo. Then we do not need this Rs. 7,000 crore subsidy which will go up. It is only going up. In 1985, it used to Rs. 1,900 crore and in 2012, it was Rs. 75,000 crore. So, it kept growing up. I think the country really needs to re-think how much it is spending directly, but also how much it is spending indirectly through the externalities, through the damage of our soil, our water or air or climate and the health of our people."

2.27.4 Similarly, another agriculture expert (Dr. K.K. Tomar) appeared before the Committee and made the following suggestions for promotion of organic farming in the country:—

"Yes, sir, such programmes be made for radio or T.V. So that farmers from various parts of the country could come and share their knowledge regarding organic farming on T.V. or radio and could also extend the advantages of their knowledge

to the farmers all over the country through sharing the knowledge. The farmers cultivating the organic farming be included in clusters and resources of irrigation, cultivation, plantation be encouraged as a use of collective ownership. Clusters of farmers cultivating the organic farming at village, block, panchayats and district level be made in our co-operative system and the resources of cultivation, plantation and irrigation be encouraged as a collective ownership. Farmers drawing out water excessively from this ground through tube wells, hike be made in their electricity bills because the water level is depleting rapidly and it has gone almost 45-46 feet deep during the last fifty years. A library on organic farming is to be set up in each block where all the related books, magazines, periodicals, news papers, etc. should be made available so that farmers could get the information by studying there. All the literature should be made available free of cost. Organic farmer's groups should be constituted in the villages on the lines of farmers' groups and women groups and the organic farming should be popularized through these groups. There should be an arrangement to honour the organic farmers. As you know that organic farmers think that their agricultural produce get reduced during first and second year and how they will overcome that loss, therefore, such farmers need to be honoured and encouraged so as to popularize the organic farming and thus it will become a mass movement. For this, Farmers' Field School should be established in each district where farmers can attend the classes and there should be an arrangement for demonstration."

2.27.5 Referring to the significant move towards organic agriculture by many countries in a big way, Shri Mangala Rai, former Secretary, DARE and DG ICAR, submitted as under:—

"A mass Movement is essential for education, awareness generation, quality organic input production and their storage, transportation and effective application."

2.27.6 In response to a specific query as to the effectiveness of the extant awareness programmes among farmers about the benefits of organic farming and the ways to make it more effective , Dr. Mangala Rai submitted:—

"In the first place, rigorous training of trainers is essential. They must have a system perspective with a system-wise approach. We need to understand that neither crop, nor is cropping system or farming system but total production to consumption system is essentially brought to bear."

CHAPTER III

ORGANIC FARMING—FINANCIAL PERFORMANCE

Budgetary Allocations and Utilization under NPOF

The budgetary allocations, revised estimates and actual utilization under NPOF during XI and XII Plan as provided by the Ministry of Agriculture (Department of Agriculture and Cooperation) are as under:—

XI Plan (Rs. in Lakh)

Sl.No.	Head	Financial Achievements under NPOF during 11th Five Year Plan Period														
		2007-08			2008-09			2009-10			2010-11			2011-12		
		B.E.	R.E.	Exp.	B.E.	R.E.	Exp.	B.E.	R.E.	Exp.	B.E.	R.E.	Exp.	B.E.	R.E.	Exp.
1.	**MH-2401**															
	(i) Other than Grants-in-Aid (Admin.)	274	339.9	302.23	300	405	344.56	500	521	431.84	514	620	468.15	660	605	495.57
	(ii) Grants-in-Aid	226	526	525.9	800	800	502.5625	685	609.3	21	171	130	0	120	60	8
	(iii) GIA (Creation of Capital Assests)	0	0	0	0	0	0	0	0	0	0	150	150	120	60	0
	2401-789 Special Component Plan for SC (Minor Head)															
	(i) Other Administrative Expenses	0	0	0	0	0	0	0	0	0	0	0	0	20	6	0.81
	(ii) Grants-in-Aid General	0	0	0	0	0	0	0	0	0	0	0	0	90	0	0
	(iii) GIA (Creation of Capital Assests)	0	0	0	0	0	0	0	0	0	0	0	0	90	60	0
	Total	500	865.9	828.13	1100	1205	847.1225	1185	1130.3	452.84	685	900	618.15	1100	791	504.38
2.	**MH-3601**															
	Grant-in-Aid	1300	800	799.96	900	800	233.27	700	300	28.08	100	0	0	0	0	0
3.	**MH-3602**															
	Grant-in-Aid	0	0	0	15	15	7.92	15	0	0	15	0	0	0	0	0
4.	**MH-2552**															
	Grants-in-Aid to N.E. States	600	470	468.95	600	600	136.86	600	491	0	300	300	0			
	(i) GIA-General (Code No. 423)	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
	(ii) GIA-General (Code No. 796)	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
5.	**MH-4401**															
	Capital Building	300	217.34	217.34	385	785	420.09	500	500	316.43	400	600	600	700	1000	950
	Grand Total	2700	2353 .24	2314 .38	3000	3405	1645 .2625	3000	2421 .3	797 .35	1500	1800	1218 .15	2000	1791	1454 .38

XII Plan

	2012-13			2013-14			2014-15		2015-16	2016-17
	B.E.	R.E.	Exp.*	B.E.	R.E.	Exp.**	B.E.	Exp. (as on 26.08.2014	B.E. (Proj-ected)	B.E. (Proj-ected)
1	2	3	4	5	6	7	8	9	10	11
MH-2401										
(i) Admin. (Other than Grants-in-Aid)	770	610.00	590.19	1015.00	719.00	703.21	995.00	354.81	1200.00	1300.00

1	2	3	4	5	6	7	8	9	10	11
(ii) Grants-in-Aid (General)	250.00	16.00	7.88	100.00	8.00	7.88	0.00	0.00	0.00	0.00
(iii) GIA (Creation of Capital Assets)	450.00	110.00	109.74	335.00	300.00	300.00	405.00	0.00	500.00	600.00
Total	1470.00	736.00	707.81	1450.00	1027.00	1011.09	1400.00	354.81	1700.00	1900.00
MH-3601 Grants-in-Aid	0	0	0	0	0	0	0	0	0	0
MH-3602 Grants-in-Aid	0	0	0	0	0	0	0	0	0	0
MH-2552 Grants in-Aid to UN—	0	0	0	0	0	0	0	0	0	0
N.E. States	0	0	0	0	0	0	0	0	0	0
(i) GIA-General (Code No. 423)	0	0	0	0	0	0	0	0	0	0
(ii) GIA-General (Code No. 796)	0	0	0	0	0	0	0	0	0	0
MH-4401 Capital (Building)	630.00	536.50	436.50	50.00	430.00	351.31	200.00	200.00	100.00	100.00
Grand Total	2100.00	1272.50	1144.31	1500.00	1457.00	1362.40	1600.00	554.81	1800.00	2000.00

*Shortfall in expenditure due to discontinuation of direct intervention scheme under GIA.

**Shortfall in expenditure due to CPWD, Bhubneshwar surrendered the amount under Capital Head.

Subsidies/Financial Assistance

3.2 Financial assistance for creation of infrastructure on account of subsidy/ financial assistance given under various missions for creation of infrastructure for promoting organic farming as submitted by Ministry of Agriculture (Department of Agriculture and Cooperation) is as under:—

Under **Capital Investment subsidy scheme,** (through NABARD) Government is providing financial assistance for setting up of (Organic inputs) Fruit/Vegetable Market Waste/Agro Waste Compost Units and Bio-fertilisers/Bio-pesticides units as back—ended subsidy through NABARD to the tune of 33% restricted to Rs. 63.00 lakh for setting up of Fruit/Vegetable Market Waste/AgroWaste Compost Units and 25% restricted to 40.00 lakh for setting up of Bio-fertilisers production units/Bio-pesticides production units.

Under National Horticulture Mission (NHM), subsidy is provided for adoption of organic farming @ 50% of the maximum permissible cost limited to Rs. 10,000/ha. for a maximum area of 4 ha. per beneficiary. The programme is linked with organic certification. Subsidy under organic certification was project based, which is Rs. 5.00 lakh for a cluster of 50 ha. For setting up of vermi-compost units, assistance was provided @ 50% of cost limited to Rs. 60,000/unit. For NE and Himalayan States, a separate Horticulture Mission, namely, Horticulture Mission for NE and Himalayan States (HMNEH) was in operation.

Mission for Integrated Development of Horticulture (MIDH), a Centrally Sponsored Scheme has been approved for implementation during XII Plan, *w.e.f.* 2014-15, for holistic growth of the horticulture sector covering fruits, vegetables, root and tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo. Under MIDH, for adopting organic farming for perennial and non-perennial food crops, vegetables, aromatic plants, spices etc., assistance is given @ 50% of cost limited to Rs. 10,000/- per hectare for a maximum area of 4 ha. per beneficiary, spread over a period of 3 years. The programme is linked with organic certification. For organic certification assistance is project based @ Rs. 5.00 lakh for a cluster of 50 ha. Assistance for establishing vermi-compost units and HDPE Vermi beds is @ 50% cost subject to

the maximum of Rs. 50,000 per unit for a unit having a size of 30'X8'X2.5', for smaller units assistance will be on prorata basis. For HDPE Vermi bed of 96 cft. size (12'X4'X2'), the assistance is Rs. 8,000/- per bed.

3.3 The State-wise subsidy under Capital Investment Subsidy Scheme released for Organic production units under National Project on Organic Farming (now subsumed under NMSA) as furnished by Ministry of Agriculture (Department of Agriculture and Cooperation) is as under:—

Sl. No.	State	Subsidy released (₹ in lakh)				
		2008-09	2009-10	2010-11	2011-12	2012-13
1.	Andhra Pradesh	8.907	10.000	23.252	20.000	20.000
2.	Arunachal Pradesh	0.000	0.000	0.000	0.000	0.000
3.	Assam	0.938	2.596	1.375	22.319	0.750
4.	Bihar	4.500	0.000	0.000	5.250	0.000
5.	Chhattisgarh	0.000	0.000	0.000	0.000	0.000
6.	Delhi	20.000	20.000	0.000	0.000	0.000
7.	Goa	4.630	0.000	0.000	0.000	0.000
8.	Gujarat	27.064	0.000	14.750	0.000	2.030
9.	Himachal Pradesh	0.083	0.000	0.000	0.000	0.000
10.	Jammu & Kashmir	0.000	0.000	0.000	0.000	0.000
11.	Jharkhand	0.000	0.000	0.000	0.000	0.000
12.	Karnataka	12.184	6.183	73.309	0.000	0.000
13.	Kerala	0.000	30.066	0.000	6.784	0.000
14.	Madhya Pradesh	1.802	5.040	0.000	0.000	2.258
15.	Maharashtra	17.144	38.458	13.750	43.084	23.005
16.	Manipur	0.000	0.000	0.000	0.000	0.000
17.	Meghalaya	0.000	0.000	0.000	0.000	0.000
18.	Mizoram	0.000	0.000	0.000	0.000	0.000
19.	Nagaland	0.000	0.000	0.000	0.000	0.000
20.	Odisha	0.000	0.000	0.000	0.000	0.000
21.	Punjab & Haryana	37.218	61.602	24.860	14.040	0.000
22.	Rajasthan	11.392	55.610	30.450	21.335	0.000
23.	Sikkim	0.000	0.000	0.000	0.000	0.000
24	Tamil Nadu	7.799	10.993	13.044	0.000	0.000
25	Tripura	0.000	0,000	0.000	20.000	0.000
26	Uttar Pradesh	77.126	9.750	25.687	3.300	0.000
27	Uttarakhand	9.810	8.945	8.750	0.000	0.000
28	West Bengal	7.469	0.000	0.000	0.000	0.000
	Total	248.065	259.243	229.227	156.112	48.043

Financial Assistance to Farmers

3.4 Furnishing further details on the financial assistance given to farmers for promotion of organic farming, Ministry of Agriculture (Department of Agriculture and Cooperation) submitted as under:—

- Government is providing financial assistance to farmers through State Government for adoption of organic village for manure management @ Rs. 10 lakhs/village for adoption of integrated manure management, planting of fertilizer trees on bunds and promotion of legume intercropping through groups/ SHGs, etc.
- Under MIDH Government is providing financial assistance for adoption of organic farming @ Rs. 10,000 (maximum) for 4 ha. (50% of total cost) while Rs 300 per ha. upto 4 ha. (limited to 50% of cost) is provided for promotion of use of liquid bio-fertilizers.
- Promotion of Organic Inputs on farmer's field (Manure, Vermi-compost, Bio-Fertilizers Liquid / Solid, Waste compost, Herbal extracts, etc.)— 50 % of cost subject to a limit of Rs. 5000/- per ha. and Rs. 10,000 per beneficiary. Propose to cover 1 million ha. area.

Fund Flow Mechanism

3.5 The pattern of release of fund, *i.e.* fund flow mechanisms under various missions NMSA, MIDA, NFSM by Ministry of Agriculture (Department of Agriculture and Cooperation) furnished as under:—

"(i) **Fund flow mechanism in NMSA**

Consequent to approval of AAP, funds will be released to State Nodal Department or designated implementing agency notified by the State. State Level Implementing Agency would ensure implementation in a time bound manner in accordance with their approved AAP. Funds will be released in installments based on physical & financial progress report, submission of utilization certificates and other necessary documents as per provisions of General Financial Rules, specific emergent need, etc.

(ii) **Fund flow mechanisms in MIDH**

Funds will be released to the State Governments. State Government will release funds to the SHMs/State Level Implementing Agencies, who in turn would make funds available to DMC/ District Implementing Agency. As far as possible, efforts to make on-line payment to all Implementing Agencies would be ensured, which in turn will make arrangements for making payment to beneficiaries through electronic transfer, preferably to their respective bank accounts.

(iii) **Mechanism of fund flow in NFSM**

Funds for implementing the National Food Security Mission's programme will be released to the State Governments with the approval of the NFSMEC. The State Governments will release the funds to the State Level Agency. The State

Level Agency would make funds available to the District Level Agency in accordance with approved programme of the district. Funds would be released in instalments based on the progress reports and submission of utilization certificate.

The funds for the implementation of the activities of the components will be released by the State/District Level Agency to the nodal departments for the procurement of the required inputs. The nodal departments will submit the utilization certificate to the State/District Level Agency which, will be compiled and a consolidated utilization certificate, duly authenticated by the DFSMEC and SFSMEC will be submitted to the Ministry of Agriculture, Government of India for further release of fund.

(iv) **Mechanism of Fund Flow in RKVY**

50% of the RKVY annual allocation will be released as first instalment to have State, upon the receipt of the minutes of State Level Selection Committee (SLSC) approving implementation of new projects and/or continuation of ongoing projects during current financial year along with lists of projects approved and their entry in RKVY database (RDMIS).

In case total cost of approved project is less than annual outlay, funds to the tune of 50% of approved project cost will be released.

Release of the second and final instalment would be considered on the fulfillment of the following conditions:

(a) 100% Utilization Certificates (UCs) for the funds released upto previous financial year Expenditure of at least 60% of funds released in first installment during the current year.

(b) Submission of performances report in terms of physical and financial achievements as well as outcome, on a quarterly basis, within the stipulated time-frame in specified format."

3.6 The Ministry of Agriculture (Department of Agriculture and Cooperation) in a written note submitted on the financial assistance provided to State Governments stated as follows:—

"Under Capital Investment subsidy scheme, Government is providing financial assistance for setting up of Organic inputs Fruit/Vegetable Market Waste/ Agro Waste Compost Units and Bio-fertilisers/Bio-pesticides units as back-ended subsidy through NABARD to the tune of 33% restricted to Rs. 63.00 lakh for setting up of Fruit/Vegetable market Waste/Agro-Waste Compost Units and 25% restricted to 40.00 lakh for setting up of Bio-fertilisers production units/Bio-pesticides production units. State-wise details of total number of Compost production units and Bio-fertilizer production units set up under NPOF by NABARD and total production capacity generated (in MT) by these units sanctioned during October 2004 till March 2014 is enclosed at **Appendix- III.**

Under RKVY the assistance approved for organic farming to the States during previous five years is at **Appendix - IV.**

Under National Horticulture Mission (NHM), subsidy was provided for adoption of organic farming @ 50% of the maximum permissible cost limited to Rs. 10,000/ hac. for a maximum area of 4 hac. per beneficiary. The programme is linked with organic certification. Subsidy under organic certification was project based, which is Rs. 5.00 lakh for a cluster of 50 hac. For setting up of vermi-compost units, assistance was provided @ 50% of cost limited to Rs. 60,000/unit. Details of State-wise financial assistance provided during each of the last four years is given at **Appendix - V.**

For NE and Himalayan States, a separate Horticulture Mission, namely, Horticulture Mission for NE and Himalayan States (HMNEH) was in operation. Details of funds released for organic farming under HMNEH is at **Appendix -VI.**"

3.7 Highlighting the financial constraints of organic farming while appearing before the Committee, the Secretary, Ministry of Agriculture submitted as under:—

"We are working on the constraints. Our Minister is extremely keen on organic farming. This is a subject right up his heart. In fact, it is not only organic; it is anything to do with the efficient use of resources including fertiliser resources is not being looked at. We are continuing to subsidize urea. Today, the subsidy on urea is to the extent of 75 per cent. We are continuing to subsidise urea. We are not subsidising secondary nutrients or micro nutrients. We are not subsidising soil carbon..... We want either you have an income transfer scheme to the farmers. I think the fertiliser subsidy regime has done the maximum damage to Indian agriculture.....आप बाकियों के लिए एक लाख करोड़ रुपए दे रहे हैं, मुझे आप 50 करोड़ दे रहे हैं for organic farming and then you are expecting me to compete, it is not possible."

3.8 The Ministry of Agriculture (Department of Agriculture and Cooperation) in a written reply to a query on the financial assistance available for creation of infrastructure and availability of inputs, stated as under:—

"**Setting up of Bio-fertilizer and Organic Fertilizer Testing/Quality Control Laboratory (BOQCL) under FCO —** For setting up of Bio-fertilizers/Organic Fertilizers Testing/Quality Control Laboratories assistance as Grant-in-Aid shall be provided to State Government.

Strengthening of existing Bio-fertilizer and Organic Fertilizer Testing/ Quality Control Laboratory (BOQCL) under FCO — For existing Bio-fertilizers/ Organic Fertilizers Testing/Quality Control Laboratories established by State Government under FCO financial assistance @ Rs.45.00 lakh per unit shall be provided as Grant-in-Aid for their strengthening in terms of equipments/ instruments etc. In all 8 such units are to be provided financial assistance during 12th plan period with a total cost of Rs. 360.00 Lakh.

Support to PGS system for online data management and residue analysis — Assistance shall be provided to State Government for assisting authorized

Regional Councils under PGS-India programme as Grant-in-aid for on data management of group registered under each Regional Council and residue analysis of soil from registered farmers under Local Group of Regional Council.

Organic Village adoption for manure management and biological nitrogen harvesting — State Government shall be provided assistance as Grant-in-Aid for adoption of organic villages against state specific project proposal for adoption of organic village.

Support to research for development of organic package of practices specific to state and cropping system — For development of organic package of practices specific to cropping system and state-specific assistance as Grant-in-Aid to eligible ICAR/SAUs/Other research institutions/State Government agencies with research facilities shall be provided on specific proposal basis.

Setting up of separate Organic Agriculture Research and Teaching Department — For proper popularization of organic agriculture, there is a need to establish separate departments under State Agricultural Universities where diploma/degree courses on organic agriculture can be conducted. For this purpose assistance as Grant-in-Aid shall be provided to SAUs against specific proposal from SAUs. It is proposed to establish 8 such department in various universities during 12th plan period.

Promotion of Organic Inputs on farmer's field (Manure, Vermi-compost, Bio-Fertilizers Liquid/solid, Waste compost, Herbal extracts etc.)— For promotion of organic inputs financial assistance @ 50 % of cost subject to a limit of Rs. 5000/- per ha. and Rs. 10,000 per beneficiary will be provided. 1 million ha. area is proposed to be covered during 12th Plan period.

Adoption of organic farming through cluster approach under Participatory Guarantee System (PGS) certification—For adoption of organic farming through cluster approach under Participatory Guarantee System (PGS) certification financial assistance of Rs. 20,000/- per ha. subject to maximum of Rs. 40,000/- per beneficiary will be provided for 3 year term.

Field demonstrations-cum-field days — To demonstrate the organic farming packages in PGS clusters/farmers' field, one practicing organic farmer shall be selected for demonstration and field days shall be arranged. Entire organic packages including multiple cropping, crop rotation, conversion, documentation etc. shall be demonstrated."

CHAPTER IV

ORGANIC FARMING—PHYSICAL PERFORMANCE

Physical Performance during XI Plan as furnished by Ministry of Agriculture (Department of Agriculture and Cooperation) is as under:—

Physical Targets and Achievements during 11th Five Year Plan Period (2007-08 to 2011-12)

Sl. No.	Components	2007-08		2008-09		2009-10		2010-11#		2011-12		Total XI Plan	
		Targ.	Achie.	Targ.	Achie.	Targ.	Achie.	Targ.	Achie.	Targ.	Achie.	Targ.	Achie.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
A.	Capacity Building through Service Providers	100	147	110	49	100	0	-	-	-	-	310	196
B.	**Organic Inputs Production Units**												
(i)	Fruit/Veg. Compost unit	10	11	11	1	10	0	-	2	-	3	31	17
(ii)	Bio-fertiliser Production Units	10	19	11	3	15	0	-	4	-	4	36	30
(iii)	Vermi-culture hatcheries	150	572	200	108	200	0	-	0	-	-	550	680
C.	**Training Programme**												
(i)	Training on Certi-fication & Inspection Agencies	20	51	50	32	50	8	Component discontinued in favour of schemes like RKVYand NHM				120	91
(ii)	Training on Production & Quality Control of Organic Inputs	90	61	70	53	70	8	Component discontinued in favour of schemes like RKVY and NHM				230	122
(iii)	Training of Extension Staff/Field Function-aries	70	171	76	147	76	22	Component discontinued in favour of schemes like RKVY and NHM				222	340
(iv)	Training of Farmers on organic Farming	150	2017	500	608	500	160	Component discontinued in favour of schemes like RKVY and NHM				1150	2785
(v)	International Trainer Training Programme	0	0	0	1	0	0	-	-	-	-	-	1

1	2	3	4	5	6	7	8	9	10	11	12	13	14
(vi)	Certificate Courses on Organic Farming	-	-	-	-	-	-	1	0	1	1	2	1
(vii)	Refresher Course for Analysts	-	-	-	-	-	-	8	7	6	5	14	13
(viii)	Training for Field Functionaries extension Officer	-	-	-	-	-	-	29	29	42	39	71	71
(ix)	Trainers Training of Organic Management	-	-	-	-	-	-	21	21	31	30	52	52
(x)	Awareness Programme (Workshops)	-	-	-	-	-	-	3	3	-	-	3	3
(xi)	Workshop on PGS	-	-	-	-	-	-	-	-	5	5	5	5
(xii)	National Seminar	-	-	-	-	-	-	-	-	1	1	1	1
D.	**Field Demonstrations**												
(i)	Field Demons-trations On Org. Inputs	1000	1785	1100	779	1000	360	Component discontinued in favour of schemes like RKVYand NHM				3100	2924
(ii)	Setting up of Model Org. Farms	60	164	60	52	60	5	Component discontinued in favour of schemes like RKVYand NHM				180	221
(iii)	Field Demons-trations on enriched Bio-gas slurry	70	169	70	108	70	0	Component discontinued in favour of schemes like RKVY and NHM				210	277
E.	**Market Development and Promotion**												
	Seminar	0	25	0	15	0	5	Component discontinued				-	45
	New Initiative	0	8	0	0	0	0	in favour of schemes like				-	8
	International seminars/ exhibitions etc.	0	3	0	3	0	2	RKVY and NHM				-	8
F.	Biological Soil Health Assessment	-	-	-	-	-	-	-	Under Process				
G.	**Publication of Newsletter**												
	Biofertilizer Newsletter	2	2	2	2	2	2	2	2	2	2	10	10
	Organic Farming Newsletter	4	4	4	4	4	4	4	4	4	4	20	20
H.	Capacity Building for Participatory Guarantee System (PGS)	-	-	-	-	-	-	-	Programme Launched		20 Regional councils Appointed		

1	2	3	4	5	6	7	8	9	10	11	12	13	14
I.	Publication of Literature	-	-	-	-	-	-	4	7				
J.	**Quality Control**												
	Bio-fertilizers	1907		1234		1927		1228		1601		7897	
	Organic	2000	2000		2000		2000		2000		10000		
	Fertilizers	115		273		987		271		349*		1995	
K.	**Maintenance of Strain and Supply**												
	Total Strains Maintained	-	500	-	500	-	500	-	500	-	500	-	500
	No. of Slants Supplied	-	1024	-	865	-	954	-	1465	-	1188	-	5496
L.	No. of Samples Tested under Study Project	-	-	-	-	-	-	-	385	-	133	-	518

*Including samples tested for study project.
Mandates have been revised *w.e.f.* 2010-11.

4.2 Physical targets and Achievements during 2012-13, 2013-14 and projected target for 12th Five Year Plan Period (2014-15 to 2016-17) as furnished by Ministry of Agriculture Department of Agriculture and Cooperation)

Sl. No.	Component scheme/ programme	Quantifiable deliverables/physical outputs	2012-13		2013-14		2014-15	2015-16	2016-17
			Target	Achieve-ment	Target	Achieve-ment	Target (Project-ed)	Target Project-ed)	Target (Project-ed)
1	2	3	4	5	6	7	8	9	10
1.	National Centre of Organic Farming, Ghaziabad.	Fruit and Vegetable Market Waste Compost unit	-	3	-	3	Under Capital Investment Subsidy Scheme through NABARD on requirement basis.		
		Bio-fertiliser Production Units	-	4	-	4			
		Certificate Course on Organic Farming (30 days) @ Rs. 2.345 lakh	2	2	3	3	3	3	3
		Refreshers Course for Analyst (10days) @ Rs. 1.08 lakh	8	7	6	6	6	6	6
		Trainers Training course on Organic mgmt. (5 days) @ Rs. 0.635 lakh	32	31	35	35	35	40	45
		Training for Field Functionaries/Ext. Off @ Rs. 0.21 lakh (2 days)	77	75	140	140	140	150	160
		National Seminar	2	2	-	-	-	2	3
		Capacity Building for Participatory Guarantee System (PGS) / RCs appointed	-	20 RCs appointed	-	PGS-India website portal is under preparation	-	-	-
		Publication of news letters							
		Bio-fertiliser News Letter	2	2	2	2	2	2	2
		Organic Fertiliser News Letter	4	4	4	4	4	4	4

1	2	3	4	5	6	7	8	9	10
		Quality Control							
		Bio-fertilizers	2000	1785	2000	1900	2000	2000	2000
		Organic Fertilizers		291		503			
		Maintenance of strains and supply							
		Total strains maintained	-	408	-	408	-	-	-
		No. of slants supplied	-	625	-	1913	-	-	-

Area under Organic Farming

4.3 State-wise details of area (ha) under organic certification (including wild harvest) in India for last five years are as under:—

States/UTs	Net Area sown (000' ha)	2009-10	2010-11	2011-12	2012-13	2013-14
Andhra Pradesh	6686	44395.67	14350.72	47456.77	5909.13	12325.03
Arunachal Pradesh	213	1897.27	243	520.43	231.49	71.49
Assam	2811	6223.12	2047.33	2048.27	2299.21	2828.26
Andaman & Nicobar Islands	15	0	334.68	0.00	321.28	321.28
Bihar	5259	1096.3	1303.62	188.60	9351.95	180.60
Chhattisgarh	4697	29084.97	8448.94	299970.60	1887.64	4113.25
Delhi	?	12734.36	265.82	100238.70	58.40	0.83
Goa	131	13175.72	13303.7	153684.60	8290.60	12853.94
Gujarat	10302	102488.4	48518.91	41978.94	45275.62	46863.89
Haryana	3518	21951.6	14763.61	17442.36	7532.62	3835.78
Himachal Pradesh	539	683697.85	631901.99	933798.20	3965.38	4686.05
Jammu & Kashmir	732	32687.11	776.48	26834.26	5121.14	10035.38
Jharkhand	1085	100	24300	29794.42	254.94	762.30
Karnataka	10523	121507.56	88728.64	118739.70	27191.27	30716.21
Kerala	2072	15372.62	6597.65	15790.49	10568.40	15020.23
Lakshadweep	?	0	12.13	891.93	350.68	895.91
Madhya Pradesh	15119	2829249	2866571.88	432129.50	144239.75	232887.36
Maharashtra	17406	35449.98	177345.48	245339.30	66504.92	85536.66
Manipur	348	10871.3	2792.03	1296.91	11.25	0.00
Meghalaya	284	2254.12	2419.67	288.23	1780.49	373.13
Mizoram	130	38674.62	12544.13	7023.97	1182.00	0.00
Nagaland	362	29715.28	1603.54	7762.60	2916.96	5168.16
Odisha	4682	92452.47	24417.55	43868.18	18186.40	49813.51
Puducherry	?			0.00	0.00	2.84
Punjab	4158	5264.23	6025.78	927.28	1601.47	1534.39
Rajasthan	18349	260827.88	217712.19	222319.10	38289.04	66020.35
Sikkim	77	7393.09	1726.34	25716.55	43107.74	60843.51
Tamil Nadu	4954	78442.9	34878.09	38554.33	3066.97	3640.07
Tripura	256	281.06	348.39	4.05	209.72	203.56
Uttar Pradesh	16593	26567.68	111644.83	2593821	32889.85	44670.10
Uttarakhand	723	33181.3	105465.98	122880.60	20563.75	24739.46
West Bengal	4991	14861.22	6125.72	19095.55	1279.41	2095.51
Total	141515	4551899	4427519	5550405	504439.47	723039.04

Pointing out the increase of 150% in Andhra Pradesh and 200% in area under organic farming within one year by States like Andhra Pradesh and Orissa, the Ministry was requested to furnish as to how it could be possible that there was no specific reply from the Ministry.

CHAPTER V

SOIL HEALTH AND INTEGRATED NUTRIENTS MANAGEMENT

Soil Health Management (SHM)

Soil Health Management (SHM) is one of the most important intervention under NMSA aiming at promoting Integrated Nutrient Management (INM) through judicious use of chemical fertilizers including secondary and micro nutrients in conjunction with organic manures and bio-fertilizers for improving soil health and its productivity; strengthening of soil and fertilizer testing facilities to provide soil test based recommendations to farmers for improving soil fertility; ensuring quality control requirements of fertilizers, bio-fertilizers and organic fertilizer under Fertilizer Control Order , 1985; upgrading of skill and knowledge of soil testing laboratory staff, extension staff and farmers through training and demonstrations; promoting organic farming practices, etc.

5.2 The Secretary, Ministry of Agriculture (Department of Agriculture and Cooperation) & DG, ICAR appearing before the Committee on 20 January, 2015 on the soil health stated as follows:—

> "Over the years, soil health has deteriorated ...another problem is soil erosion. What is happening, soil gets accumulated and formed. It is not simply sediments just coming in or soil particles coming in ...We also have noticed across the country that erosion is to the level of 5 tonnes to 30 tonnes per hectare per year. It is unbelievable and shocking. Soil gets eroded. There is wind erosion, water erosion or whatever it is. It goes up to 30 tonnes. This is a cause for reduced soil health in many cases because even before the soil gets formed, it gets eroded..."

5.3 In view of above, Ministry of Agriculture (Department of Agriculture and Cooperation) were requested to furnish the corrective steps/measures taken or proposed to be taken to ensure and maintain soil health, they in a written reply stated as follows:—

> "Land Degradation is one of the major issues of rainfed/dryland region of the country. The Council through Central Soil and Water Conservation Research and Training Institute, Dehradun and Central Arid Zone Research Institute, Jodhpur conducts research on issues related to water & wind erosion respectively. The Institutes suggested several location specific bio-engineering measures of soil and water conservation to tackle soil erosion in the country. The problems of salt affected and water logged soils are being addressed by Central Soil Salinity Research Institute, Karnal through All India Coordinated Research Project on Salt Affected Soils. The Institute has developed cost effective reclamation measures and salt tolerant varieties in this regard. These Institutes organize training for popularizing various control measures.

These measures coupled with site specific balanced & integrated nutrient management and Resource Conservation Technologies (RCTs) are advocated to improve soil health and crop productivity in the country."

5.4 Furnishing a note on integrated management of nutrients including primary, secondary and micro nutrients along with their possible replenishment mechanism, the Ministry of Agriculture (Department of Agriculture and Cooperation) submitted that:—

"ICAR through Indian Institute of Soil Science and AICRPs on Soil Test Crop Response (STCR), Micro and Secondary Nutrients and Pollutant Elements (MSNP) in Soils and Plants, Long Term Fertilizer Experiments (LTFE) and Network Project on Soil Biodiversity—Biofertilizers are addressing soil health and fertility related problems in the country. The Council is advocating soil test based balanced and Integrated Nutrient Management (INM) through conjunctive use of both inorganic and organic sources of plant nutrients to sustain physical, chemical and biological health of soils for higher crop productivity. The Council organizes training & FLDs etc. to educate farmers in this regard. The Government under the component of soil health management of National Mission for Sustainable Agriculture (NMSA) is promoting INM encompassing judicious use of chemical fertilizers in conjunction with organic manures, compost, biofertilizers etc. in the country. Recently, a National Mission on Soil Health Card has been launched to provide soil tested based fertilizer recommendation to all the farmers in the country."

Soil Health Cards

5.5 Furnishing detailed note on soil health cards covering *inter-alia* the objectives, features, contents, number of such cards issued to the farmers (State-wise), year- wise during the last five years and the target fixed for 2015-16 , the Ministry of Agriculture (Department of Agriculture and Cooperation) in a written reply stated that Central Government provides assistance to State Governments for setting up Soil Testing Laboratories (STLs) and Mobile Soil Testing Laboratories (MSTLs) through National Mission for Sustainable Agriculture. In order to promote soil test based application of fertilizers in respect of all the 14 crore holdings in country and to implement uniform norms in sampling and testing of soil, a new scheme 'Soil Health Card' is launched in 2014-15. Under this scheme, Soil Health Cards will be issued periodically to farmers across the country once in every three years.

The details of the scheme as submitted by the Ministry of Agriculture (Department of Agriculture and Cooperation) are as follows:—

(a) Objectives of the scheme are as follows:

- To issue soil health cards every three years, to all farmers of the country, so as to provide a basis to address nutrient deficiencies in fertilization practices.
- To strengthen functioning of Soil Testing Laboratories (STLs) through capacity building, involvement of agriculture students and effective linkage with Indian Council of Agricultural Research (ICAR)/ State Agriculture Universities (SAUs).

- To diagnose soil fertility related constraints with standardized procedures for sampling uniformly across States and analysis and design taluka/ block level fertilizer recommendations in targeted districts.
- To develop and promote soil test based nutrient management in the districts for enhancing nutrient use efficiency.
- To build capacities of district and State level staff and of progressive farmers for promotion of nutrient management practices.

(b) Implementation plan for the scheme:

(i) *Selection of Districts*

To issue Soil Health Cards (SHCs) to all 14 crore holdings in the country, about 2.48 lakh samples are to be analysed in 3 years cycle. This comes to about 83 lakh samples per year. The number of samples per district comes to approximate 13,000 samples per annum.

The State Governments will prepare yearly action plan indicating (i) number of districts to be covered, (ii) number of irrigated holdings and rainfed holdings in the selected districts, (iii) number of soil samples to be drawn from the holdings and (iv) finally total number of samples to be drawn and tested.

(ii) *Agencies that may be involved for drawing samples from field*

(a) Directly through Agriculture Department staff and soil test laboratories.

(b) By involving Science Colleges and students and its soil test laboratory staff.

(c) By State Agriculture Universities (SAUs) and its soil testing staff.

(iii) *Agencies that may be involved in testing*

(a) By outsourcing the process of testing & reporting to private agencies through tender.

(b) By outsourcing soil testing laboratories.

(c) By nominating Science Colleges and providing them equipment to test the samples.

(d) Directly through soil testing laboratories.

(iv) *Norms of soil sampling*

The quality of soil testing and fertilizer recommendation depends upon soil sampling. Following uniform norms are prescribed for sampling.

(i) In the irrigated areas, samples will be drawn in a grid of 2.5 ha.

(ii) In rainfed areas, sampling will be done in a 10 ha. grid.

(iii) In all, 248 lakh samples will be tested to generate 14 crore soil health cards in three years period.

(v) *Training for soil analysis*

One-week hands-on orientation training to soil chemists, students/ JRFs for soil analysis and fertilizer recommendations in the batches of 20 participants will be organized by State Governments.

(vi) *Soil Health Card*

Soil health card is a report of soil fertility status and provides an advisory on soil test based use of fertilizers and amendments.

(vii) *Details in a Soil Health Card*

(i) Values on soil parameters such as pH, EC, N, P, K, S, Zn, B, Fe, Mn & Cu.

(ii) Recommendation on appropriate dosage of fertilizer application based on test values and requirement of Kharif, Rabi and Summer crops.

(viii) *Financial assistance for package of nutrient recommendations*

In the target villages, financial assistance for soil test based nutrient balancing will be provided to farmers. Willing farmers will be registered for application of recommended doses to supplement organic and inorganic nutrients.

(ix) *Capacity building*

States will be provided assistance for maintenance of Data Base and promotion of ICT tools to map the soil fertility status from time to time. Uniform software will be developed by NIC to input management practices, soil test values and nutrient recommendations. Soil Health Card will be generated from this data base.

(x) *Budget*

Implementation of this scheme will have direct benefits in terms of avoiding indiscriminate use of fertilizers, improving soil health and thus increasing fertilizer use efficiency. The total budget approved is Rs. 568.54 crore during 12th Plan period.

(c) Number of Cards issued to farmers:

Soil Health Card Scheme is being implemented for the first time. Earlier the States were issuing soil health card and year-wise number of soil health cards issued during last five years is at **Appendix - VII,** as reported by States.

(d) Target and Budget Estimate (BE) fixed for 2015-16:

Tentative target for number of soil samples to be analyzed in 2015-16 is Rs.81 lakhs. The BE 2015-16 for Soil Health Management is Rs. 200 crores (including the soil health card component)."

Soil Erosion —Suitable Incentives

5.6 In written reply to a query on the stakeholder's suggestion that soil fertility should be recognized as national property and Government should invest in building it and suitable incentives should be given to encourage for increasing the soil organic matter and soil conservation, Ministry of Agriculture (Department of Agriculture and Cooperation) stated as follows:—

> "Soil erosion removes fertile top soils with loss of precious organic matter/ carbon and vital plant nutrients. Therefore, soil and water conservation measures and use of organic manures/compost are essential not only to conserve soil organic carbon and facilitate nutrient supply but also to check deterioration of soil physical & biological health for improving crop productivity."

Deterioration of Soil Health and Nutrients

5.7 Dr. Mangala Rai, former Secretary, DARE and DG, ICAR who interacted with the Committee in a note submitted highlighting the deteriorating soil health and nutrient imbalances adversely affecting productivity and product quality stated as under:—

> "A healthy soil ensures proper retention and release of water and nutrients, promote and sustain root growth, maintain soil biotic habitat, and resist soil degradation. Thus managing soil health is basic to agriculture to ensure enhanced agricultural productivity, profitability and food, nutrition and environment security. Quality soils also ensures storing and cycling nutrients and filtering & buffering organic and inorganic compounds for providing potable groundwater. Therefore, its management must be the core component of our strategy for sustenance of ever-increasing population and development pressure. As population expands and urbanization spreads, less soil and area per capita would be available for cultivation. This happens in two ways: (a) removal of top soil for brick making and for other construction activities, and (b) sealing of soil for housing, road or other infrastructure. About 7 % of the geographical area, for which land-use statistics is available, is used for non-agricultural purposes, this area is estimated to be increasing at the rate of 0.3 million ha/year.
>
> Degradation of soil health is increasing due to long-term imbalanced use of fertilizers. The numbers of nutrient-elements deficient in Indian soils increases from just one (nitrogen) in 1950 to nine in the year 2005-06 which is further increasing by each year. Soil fertility studies bring out that available N, P and K are low to medium respectively in 90%, 80 % and 50% of the Indian soils. About half of the arable soils are deficient in available zinc. The extent of deficiency of available iron, manganese and copper in Indian soils is 12%, 5% and 3%, respectively. Continuous use of sulphur free fertilizers has increased the wide spread occurrence of S deficiency in 41% soils. Boron deficiency is wide spread in acid and calcareous soils. Although overall nutrient use (N: P2O5:K2O) of 4:2:1 is considered ideal for Indian soils, the present used ratio of 6.8:2.8:1 is far off the mark. In State like Punjab it is 39:9:1. Thus the factor productivity of fertilizers showed a declining trend from 48 kg foodgrains/kg NPK fertilizer in 1970-71 to 10kg foodgrains/kg NPK fertilizer in 2007-08 in the country.

Maintenance of soil biodiversity is essential for food production, nutrient cycling, regulation of water flow, soil and sediment movement, detoxification of xenobiotics and other pollutants etc. Erosion, salinization, land sealing and pesticides and heavy metal contamination threaten soil biodiversity by destroying the habitat of the soil biota. Management practices that reduce organic matter in soils, or bypass biologically-mediated nutrient cycling also adversely affect soil health."

5.8 Dr. Mangala Rai further added as under:—

"The NPK fertilizer consumption was 26.5 million tonnes in 2009-10. It was estimated to be 34.9 million tonnes during 2013 and expected to be 36.6 million tonnes during 2017. There exists a negative balance of about 10 million tonnes in nutrient (NPK) removal by crops annually. The deficit does not take into account the nutrient use efficiency of the externally added fertilizer nutrients. Also inappropriate fertilizer application methods and schedules often result in loss of nutrients through leaching, volatilization and gaseous emissions. Current status of nutrient use efficiency is quite low in case of P (10-20%), N (30-50%), Zn (2-5%), Fe and Cu (1-2%). The use efficiency in case of micronutrients is extremely low (1 to 5%). Therefore, research for improving the use efficiency of these nutrients must receive top priority.

About 48.5 per cent of Indian soils are deficient in micronutrient zinc (Zn) (it is expected to aggravate to 65 per cent by 2025), 33 per cent are deficient in boron (B) and 12 per cent are deficient in iron (Fe). Zn deficiency is reported to be the highest (40-86 per cent) in Haryana, Punjab, Uttar Pradesh, Bihar, Orissa, Madhya Pradesh, Andhra Pradesh, Karnataka and Tamil Nadu, followed by Assam and West Bengal (30-40 per cent). Further, most boron (B) deficient soils (32-65per cent) are in Bihar, West Bengal and Karnataka. Of all the micronutrients, Zn is most widely deficient in Indian soils and crop response to Zn has been reported for almost all crops.

About 121 million ha (36 per cent of total geographical area) lands are at various stages of degradation in the country. About 25 M ha of soils are acidic and therefore deficient in calcium and magnesium and often possess toxic levels of aluminium and iron. In addition, 6.7 M ha salt affected soils still exist. Insufficient nutrient replacement especially in intensively cultivated soils of north-west IG plains is leading to chemical soil degradation (24.7 M ha). Large areas in peninsular India have vertisols which have poor drainage and workability problems. Besides this, arable soils also suffer from nutrient mining and pollution problems. All these soils are in need of some soil and water conservation /reclamation measures for their rehabilitation/resilience.

The deficiency of secondary and micronutrients can thus be overcome by more and more use of organics and for fortification of the presently manufactured N/P fertilizers to develop value-added/fortified fertilizers.

The fertilizers approved by the Government of India (The Fertilizer Control Order of 1985 amended up to January, 2011) are Boronated single superphosphate, Zincated urea, Zincated phosphate (suspension), NPK fertilizer fortified with B, DAP fortified with B, NPK fertilizer with Zn, and Calcium nitrate with B. In an era of multiple nutrient deficiencies, single nutrient approach can lower fertilizer use efficiency. Balanced nutrition implies that there are no deficiencies, no excesses, no antagonism and no negative interaction. All nutrients must be at an optimum by themselves and in relation to each other enabling positive interactions to enhance agricultural productivity. The process of approving, pricing and incorporation in Fertilizer Control Order by Government of India for Value Added Fertilizers needs to be accelerated."

Policy Framework for Promotion of Integrated Nutrient Management

5.9 With regard to new initiatives taken to promote balance use of nutrients, Ministry of Agriculture (Department of Agriculture and Cooperation) stated as under:—

"For promotion of Integrated Nutrient Management, DAC is focusing on balance use of fertilizers both organic and inorganic nutrients, in accordance with results of Long Term Fertilizer Experiments. Schemes of assistance are under implementation in DAC to promote the production of organic and bio inputs through State Governments, private entrepreneurs and on- farm production by farmers. Alongside certified organic farming is encouraged and assisted through NMSA and NPOP. Several States have formulated policies to support certified organic farming. Thus the present policy advocates balanced use of nutrients for food production and provides assistance for organic and inorganic input availability. It promotes both Conventional Farming and Organic Farming through its scheme and research programmes to disseminate benefits and issues that may arise in Conventional Farming and Organic Farming.

Present policy of subsidy on fertilisers is focused towards making available chemical fertilisers to farmers on highly subsidized prices. This has led to inclination of farmers towards more and more use of chemical fertilisers. Department of Agriculture and Cooperation has been promoting balanced use of organic and inorganic fertilisers for Soil Health Management.

There is a lot of debate and discussion on the need to focus on both inorganic and organic fertilisers equally. There is a need to move towards direct cash transfer to farmers on unit area basis so that farmers are free to choose between chemical fertilisers and organic fertilisers."

Pest Management

5.10 The Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India had launched a Scheme "Strengthening and Modernization of Pest Management Approach in India" since 1991-92 for promoting Integrated Pest Management (IPM) as cardinal principle and main plank of plant protection strategy in overall crop production and protection programme. Under the ambit of IPM programme,

the Government of India has established 31 Central IPM Centres in 28 States and one UT. The following activities are carried out under the scheme:—

- "Popularization of IPM approach among farming community.
- Conducting regular pest surveillance and monitoring to assess pest/disease situation.
- Rearing biological control agents for their use in the fields against enemy pests.
- Conservation of naturally occurring bio-control agents.
- Promotion of Bio-pesticides and neem based pesticides as alternative to chemical pesticides.
- To play a catalytic role in spread of innovative IPM skills to extension workers and farmers equally to resource-poor and resource-rich States. Human Resource Development in IPM by imparting training to master trainers, extension workers and farmers through Farmers Field Schools (FFSs).
- Organization of Farmers Field Schools (FFSs) through Krishi Vigyan Kendras/ State Agriculture Universities/ICAR institutes to develop the sufficient human resource.
- Under the Human Resource Development programme, organization of short duration courses of two days and five days for pesticides dealers/NGOs/ Graduates/Post-graduates/Pvt. Entrepreneurs and progressive farmers.
- Organization of Season Long Training (SLT) programmes on major agricultural/horticultural crops for extension workers of the States Governments."

Outcome of Integrated Pest Management (IPM)

5.11 Since inception of the Scheme; "Strengthening and Modernization of Pest Management Approach in India during 1991-92 to 2014-15 (up to February, 2015) various activities have conducted as submitted by Ministry of Agriculture (Department of Agriculture and Cooperation) as follows:

- "Farmers Field Schools (FFSs): 15,869.
- Number of farmers trained: 4,77,068.
- Number of Agriculture/Horticulture officers trained: 58,620.
- Area covered under Pest Monitoring: 255.42 lakh hectares.
- Bio-control agents release in the fields for control of pests & diseases: 49,112.58 million.
- Season Long Training Programmes conducted on different crops: 63 and trained 2311 master trainers.

- Since 2005-06 conducted 784 two days and 80 five days Human Resource Development Programmes. Trained 27,170 farmers in two days training programme and in five days training programmes 2960 Agriculture Extension Officers/Pesticides Dealers/NGOs/Progressive Farmers were trained and sensitized about good agricultural practices and judicious use of chemical pesticides.
- Package of Practices in 77 numbers were developed on major crops for management of pests & diseases."

5.12 On the impact of IPM programmes, the Ministry furnished information as contained in the table below:—

Crop	Cost Benefit Ratio		No. of application of pesticides		Yield (in qtls/ha)		Increase in yield (%)
	IPM	Non-IPM	IPM	Non-IPM	IPM	Non-IPM	
Cotton	1:2.7	1:2.0	3-5	13-16	3.21	3.0	7.0
Rice	1:2.2	1:1.8	0-1	5-6	22.0	21.0	7.0
Soybean	1:2.5	1:1.8	1-2	3-5	12.6	12.0	5.0
Gram	1:3.1	1:2.4	0-1	2-3	8.6	12.0	5.0
Wheat	1:1.9	1:1.6	0-2	2-3	27.8	26.2	6.0
Potato	1:2.3	1:2.1	1-2	3-5	199.8	185.0	8
Sugarcane	1:2.3	1:1.8	2-3	6-7	795.0	750.0	6

Need for Patenting of Microbiological Processes and Micro Organisms

5.13 In response to an apprehension of the Committee about the possible adverse impact of patent regime as prescribed by WTO for living organisms, the former Secretary and DG, ICAR submitted as under:—

"Mr. Chairman, Sir, excuse me, it seems to me that this question is more important than one. There was no provision in Indian Patent Act, 1970. The Indian Patent Act was amended during year 2000 and subsequently amended once again also under the provision of WTA 1995. Microbiological processes and micro organisms were patentable subjects. Fortunately or unfortunately, the first patent of micro organism was also got conducted by Shri Anand Chakravarti, an Indian and it was done in America. If anybody asks me that if you patent micro organism, what is new in it, what is the inventive step. To the best of my understanding, it should not be but there is something else in the provision. In case of molecules, there is money in it in today's world be it ayurveda or medicinal aromatic plants or pesticides. We either have no molecules or we have a scarcity thereof. There is a need to invest in it and there is a need to have molecules patent by research, only then, our medicinal plants aromatics and pesticides will have the value otherwise we will not get money as we can get."

CHAPTER VI

TRADE AND CERTIFICATION RELATED ISSUES

Market for Organic Produce

Organic produce is increasingly preferred by developed countries and major urban centres in India. The global trade is currently USD 60 billion (Rs. 3,60,000 crore) and may touch USD 100 billion (Rs. 6,00,000 crore).Trade in India may reach Rs. 5000-6000 crore, which is about 1% of the global trade. The Indian trade value of organic commodities during the years 2008-09 to 2012-13 is as under:—

(In crores)

Kind of Trade	2008-09	2009-10	2010-11	2011-12	2012-13
Food Export Growth Growth % w.r.t. previous year	300	350 (16.6%)	500 (42.8%)	600 (20%)	840 (40%)
Domestic Market Growth Growth % w.r.t. previous year	75	100 (33.3%)	150 (50%)	300 (100%)	600 (100%)
Textile Export Growth Growth % w.r.t. previous year	0	0	0	525	1025 (95.23%)

6.2 Agricultural and Processed Food Products Export Development Authority (APEDA) with a mandate for promotion of exports of agriculture products under the Ministry of Commerce provides financial assistance under Agriculture Export Promotion Plan Schemes for Infrastructure, Quality and market development. These schemes are applicable for organic products also.

6.3 Agricultural and Processed Food Products Export Development Authority (APEDA) under the Ministry of Commerce & Industry, Government of India participates in International trade fairs to provide a platform to their exporters including organic to show case their products and explore new opportunities in the global market.

6.4 In reply to a query raised by the Committee regarding market assessibility constraints for organic produce, an expert appeared before the Committee submitted as under:—

> "What I would suggest is the role of Government in ensuring that for Government-run food security schemes, they start moving towards organic with a clear transition plan. After all, for our mid-day meal schemes, women cook locally. We could create organic zones of, say a hundred farmers in this area will be able to supply organic. I call these food sheds. So, our mid-day meal

schemes and our Public Distribution System should start making a transition to organic. Of course, it is not going to happen overnight. But they should begin with saying in the first year ten per cent, in the next year twenty per cent, etc. This has happened in countries where organic became bigger. Hospitals and schools the first shift in marketing because the Government procurement is the biggest chunk of bulk support... As far as the market and distribution is concerned, not only should villages have their own Haats with the facility, I think most towns should have farmers' markets across the world again. It is when spaces were given for farmers markets, farmers could come and sell organic products. In farmers markets the costs are not higher. The costs are higher only when you have to package, label, etc. But when you come with your fresh vegetables, and the other side comes with their little bags, you can totally compete with the prices of food."

6.5 Referring to the suggestion received from stakeholders, the Ministry of Agriculture (Department of Agriculture and Cooperation) were requested to furnish as to enhance domestic organic agriculture market whether Government are initiating steps towards promotion of organic food processing industries by providing subsidies, the Ministry of Agriculture (Department of Agriculture and cooperation) in a written reply stated as follows:—

"The demand for organic produce is in following products internationally *viz.* soyameal, sugar, tea, pulses, lentil, dryfruits, medicinal herbs and basmati rice. Since many of these are processed food products, it requires promotion of processing industries."

Export Growth Potential

6.6 The Ministry of Agriculture (Department of Agriculture and Cooperation) citing the huge potential for growth in food export submitted that as per estimates, Indian Organic Sector, though very nascent, is growing rapidly both in the domestic and international markets. Rain fed agriculture which constitutes about 55% of net shown area could be targeted for expansion of organic farming as the fertilizer use per hectare in these areas is low compared to the national average. Agriculture in North-East Region and Himalayan States is also by and large natural. High value crops are most suitable for organic farming. The existing programmes for promotion of organic farming can be upscaled in the following areas:—

(i) States of North-East Region, Jharkhand, Uttaranchal and Rajasthan are mostly under mono crop and can be focused for conversion to organic farming.

(ii) States of Odisha, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Chhattisgarh, Gujarat and parts of Maharashtra and Karnataka have large areas under rain fed farming. They can be targeted for conversion to organic farming.

Organic Standards

6.7 With regard to the steps taken by the Government to introduce organic standards to cover animal husbandary, food processing, labelling, storage etc.,

The Ministry of Agriculture (Department of Agriculture and Cooperation) in a written note stated as under:—

> "The NPOP standard was notified in 2001 for exports of organic products covering standards only for crops and their processing, labelling, storage and transport. Since, there is a good demand of organic livestock and aquaculture products, standards for these products have been introduced in the seventh edition of NPOP in November 2014.
>
> Apart from above, as has been stated by the Ministry of Agriculture (DAC), the Bureau of Indian Standard is in the process of formulating two voluntary standards on the subject:
>
> (a) Organically produced food products, Part 1—Crop Based.
>
> (b) Organically produced food products, Part 2—Animal Based.
>
> The scopes of these standards are as under:
>
> (a) For Part 1: "The standard covers the requirements for organic food products that are crop based, through the process of crop production up to packaging and transport of the final product."
>
> (b) For Part 2: "The standard covers the requirements for organic food products that are livestock based, through the process of livestock rearing up to packaging and transport of the final product."
>
> As per the version of the Ministry, the documents have completed the wide circulation stage and the comments received on the documents have been discussed and resolved in the last meeting of the panel of experts responsible for formulating these standards. These documents will now be placed before the "Agricultural Systems and Management Sectional Committee (FAD 22)" of Food and Agricultural Division Council of BIS for approval. The meeting of this Committee is being planned. Once approved by this Committee these documents will be published and notified as voluntary Indian Standards."

Testing and Certification for Organic Produce

6.8 Apprising the Committee of two way as of accreditation and certifying mechanism for organic produce, Ministry of Agriculture (Department of Agriculture and Cooperation) in a written note submitted as under:—

> "Participatory Guarantee System (PGS) is a quality assurance initiative that is locally relevant, emphasize the participation of stakeholders, including producers and consumers and operate outside the frame of third party certification. As per International Federation of Organic Agriculture Movements (IFOAM) definition" Participatory Guarantee Systems are locally focused quality assurance systems. PGS is a process in which people in similar situations (in case small holder producers) assess, inspect and verify the production practices of each other and collectively declare the entire holding of the group as organic. It is based on participatory approach, a shared vision, transparency and trust.

Participatory Guarantee System (PGS-India) was developed for domestic trade. They certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange. In this system people in similar situation assess, inspect, and verify the production practices of each other and declare the entire holding of group as organic. PGS has number of basic elements which embrace a participatory approach, shared vision, transparency and trust. Participation is an essential and dynamic part of PGS. Key stakeholders are engaged in initial design and then in operation of PGS, where they are involved in decision making and mechanics of PGS, stakeholders particularly the producers are engaged in a structured ongoing learning process. This process is facilitated by PGS group itself or in some situations a supportive Government or Non-Government institution. The term PGS embodies the active participation of producers and other stakeholders in their organic guarantee process.

The PGS-India has some additional features which includes: (a) integrated with well knit institutional network, (b) entire database is available online to consumers for transparency, (c) random residue testing strengthens trust and ensures consistent quality assurance, (d) gives certificate to in-conversion crops also, and (d) provides a common platform to all groups across the country to share their experiences for better implementation. The Government support in bearing the cost of institutional networking, surveillance and monitoring, data management and random residue testing not only makes it a low cost intervention but also with the trust of Government system. The Ministry of Agriculture, Government of India, National Centre of Organic Farming and FAO have undertaken a technical cooperation programme for promotion of organic agriculture."

6.9 Adding further, Ministry of Agriculture (Department of Agriculture and Cooperation) stated as under:—

"For PGS-India, NCOF acts as a secretariat and its RCOF as Zonal Councils. To promote PGS-India system initially twenty regional councils at different States of India were started. These 20 RCs comes under jurisdiction of different Zonal Councils. Among the 20 RCs, the highest number (11) of RCs were present under zonal council /RCOF, Bangalore followed by RCOF, Nagpur (5) and NCOF, Ghaziabad (2). The highest numbers of 7 RCs are present in the State of Karnataka followed by Maharashtra (5) and Tamil Nadu (3). Presently four hundred and eight (408) numbers of groups, 5809 numbers of farmers covered with an area of 6064.14 ha. and production capacity of 23612.42 tonnes are covered under twenty different RCs. There are 21 new proposals are under consideration for RCs. A web portal on PGS is under development by National Informatics Centre (NIC).

To provide a focused and well directed development of organic agriculture and quality product National Programme on Organic Production (NPOP) was

launched under Foreign Trade Development and Regulations Act (FTDR). Regulatory body of NPOP under FTDR act is Agricultural and Processed Foods Export Development Authority (APEDA) under Ministry of Commerce. For quality assurance, the country has internationally acclaimed certification process for organic produce in place for export, import and domestic markets. It is referred as Third Party Certification involving an independent agency for verification and certification of organic production processes."

6.10 With regard to the finanacial assistance made available to PGS, in a note submitted, M/o Agriculture (Department of Agiculture and Cooperation) stated as follows:—

"The main characteristic feature of this scheme is that the organic products would be certified by farmers' groups themselves. Thus there will be no expenditure liability on the farmers for certification. In addition, every farmer will be given Rs. 20,000 per acre upto three years for adoption of organic farming. In order to implement the Paramparagat Krishi Vikas Yojana in the year 2015-16, an amount of Rs. 300 crore has been allocated as a CSS with 50:50 share between Government of India and State Governments."

6.11 On the need for certification, the Secretary, Ministry of Agriculture (Department of Agriculture and Cooperation) added as under:—

"Organic certification is essentially a requirement for our products that are exported as organic. So far as organic certification for domestic consumption is concerned, we have a participatory scheme which allows for the community to selfcertify because at the end of the day it is a question of credibility. I would say, without taking any name, that the most famous supposedly organic product, which is available in Delhi — I will not name the commercial establishments — is not organic. It is the fastest selling product which people think is organic. So, it is the credibility of the product that matters. The Certification is for Export because it is the Credibility of the Certifiers."

6.12 Responding to a query as to why organic certification for exports is under another Government entity *i.e.* Agricultural and Processed Foods Export Development Authority (APEDA) under Ministry of Commerce when the PGS system and other organic farming promoting schemes/programmes are under the Ministry of Agriculture, Secretary to the Ministry of Agriculture (DA&C) appearing before the Committee on 20 January, 2015 submitted as under:—

"Now, the role of the Department of Commerce or rather of APEDA is limited to supporting organic production and organic certification for exports. That is where now it is limited but it had started off with them. We are conceding the point it should have started with us but it started off with them."

6.13 The infrastructure support regarding promotion of organic farming certification, production units for organic inputs, storage, transportation and processing are available under Mission for Integrated Horticulture Development (MIDH). The assistance is available for all farmers/ stakeholders including those who are practicing organic farming.

6.14 Suggesting a mechanism to ensure a sound mechanism for certifying organic inputs including seeds, an agricultural expert Dr. Sirohi, who interacted with the Committee on 09 February, 2015 submitted the following:—

> "A Steering Committee can be appointed for a particular district under the leadership of the concerned University Vice Chancellor. Under his domain he will employ certain scientists working on this. We have so many Krishi Vigyan Kendras and research scientists are also available who can work simultaneously with the seed certification agency. So, the synergy between the seed certification agency and the agriculture industry may do this work."

6.15 Proposing measures to tackle the reliability issue pertaining to the extant certification process, a retired agricultural scientist and Secretary, DARE and Ex-DG in a written note submitted as under:—

> "The testing and certification system is far from satisfactory. Effective testing facilities need to be extended at least initially as an incentive to producer and consumer. Once, established and confidence is built up, it may be left to market forces."

6.16 With regard to the number of assessing and certifying bodies for organic produce, the Secretary, Ministry of agriculture (Department of Agriculture and Cooperation) deposing before the Committee on 20 January, 2015 admitted that over all their numbers are 25 and it is a barrier.

Infrastructural Support for Testing and Certification of Organic Produce

6.17 The Ministry of Agriculture (Department of Agriculture and Cooperation) responding to shortcomings in the certification process such as lack of complete reliability on the certification process, relying of certification process primarily on box ticking and less on actual testing, lack of reliable chemical residue testing which are hampering the growth of organic farming in India furnished by the stakeholders, in a written reply submitted as follows:—

> "Under NPOP, Organic certification is a process certification. Hence, only testing the product for chemicals cannot ensure the organic genuineness of the product. Stringent mandatory regime is required for implementation for the domestic market (production standards and verification process). Mandatory standards for compliance of the stakeholders will ensure the credibility of organic produce to the consumers. Presently, there is regulatory regime mandatory for implementation of organic standards for the export market. Further, there are defined procedures for analysis and residue testing under NPOP Chapter 4, section 4.3.1.4 for exports.
>
> Besides, the National Accreditation Board for Testing and Calibration Laboratories (NABL) accreditated labs has facility for residual testing. However, the DAC has already activated PGS-India programme through NCOF to provide free of cost certification for low & marginal organic growers, so they can supply organic produce for domestic market & get profit. Under PGS there is also provision of incentives for residual testing as under:

Component	1st year	2nd year	3rd year
5.2.4 Soil sample collection and testing (21 samples/year/cluster) @ Rs. 190 per sample for three years	Rs.3990	Rs. 3990	Rs. 3990

Under RKVY too soil testing charges and product NABL testing is provided for assistance under scheme."

Fake organic produce

6.18 On the extant institutional mechanism to detect fake organic produce/ products and to address complaints in this regard, the Ministry of Agriculture (DAC) through a written reply stated as under:—

"One way of establishing a product as organic or not is by checking for pesticide residues. However, to ensure that the product is truly organic, the operators and the certification bodies have to follow the procedures given in NPOP standard. APEDA has a mechanism for conducting annual audits and unannounced inspections with the help of experts of the Evaluation Committee. There are non compliances of major and minor nature. Where the organic integrity is likely to be affected, the non compliances are considered as major. Major non compliances on a continuous basis can affect the organic nature of the produce.

APEDA has received 25 complaints from 2012 to 2014 regarding detection of pesticides in consignments exported from India or issues related to labeling from the importing countries such as EU and USA. After receipt of such complaints, APEDA investigates the complaints from the documents provided by the certification body and the operators. Thereafter, the investigation reports are placed before the National Accreditation Body (NAB) under NPOP for decision. Several penalties based on the severity of the non compliances have been imposed by NAB on the certification bodies and exporters. The penalties includes pecuniary sanctions, ban on new registration, suspension of accreditation, suspension of exports (in case of exporters) etc.

Thus the system of inspection audits is implemented to detect non-compliance with NPOP standards."

6.19 The Secretary, Ministry of Agriculture (Department of Agriculture and Cooperation):—

"Organic certification is process oriented. It is not based on laboratory research. It is not based on the presence or absence of chemicals pesticide residue and things. It is process oriented."

6.20 In response to a query as to what action is taken against the fake organic producers/ produce the secretary stated that:—

"You are absolutely right. But I am not sure what action I can take because it is a perception."

PART II

OBSERVATIONS / RECOMMENDATIONS

1. ***Policy on Organic Farming:*** **The Committee note that since 1970, the area under cultivation in the country remained almost constant in the range of 140-142 million hectares out of the total area of 328 million hectare whereas the population has approximately trippled during this intervening period. Notably, India has approximately 17% of the world population but 2.3% of the total global land area. To meet the challenges of food security in the early sixties, the focus was shifted to chemical farming, which was propagated by the European chemists like Liebig in the nineteenth century. With this shift towards minerals-based farming and the chemical and technological advancements made in agriculture, India ushered into the Green Revolution. No doubt, the chemical based agriculture process paid rich dividends in terms of higher productivity and pulled the country out of the fear psychosis of food insecurity for the burgeoning Indian population. However, it brought a very negative cascading impact on our ecological plateau, creating adverse intricacies viz, degradation of soil health, low yields, emergence of new pests/diseases, wiping out of eco-friendly micro organisms and finally percolation of toxic chemicals into our food chain threatening the very existence of biosphere of our nation. Taking note of the adverse consequences of chemical based farming, Government launched a National Project on Organic Farming (NPOF) with an outlay of Rs. 57.05 crores as a Pilot project with effect from 01.01.2004 (Xth Plan) and the same was continued during XIth Plan with an outlay of Rs. 101 crores. However later on in the middle of XIIth Plan, this scheme was merged with a Central Sector Scheme - 'National Mission on Sustainable Agriculture (NMSA)' with an outlay of Rs. 293 crores for the remaining period of XIIth Plan. The Committee are surprised that the National Project on Organic Farming has been made a sub-component of 'Soil Health Mission' which itself is a component of NMSA. In this context, the Committee would like to refer to the visit of a British scientist Sir Albert Howard, who was sent to India by British Government in 1905 to study and suggest measures to improve agriculture in India. Sir Albert Howard in his book 'The Agricultural Testament' which is called the bible of modern organic farming, found the Indian soil fertile without any pests in the agricultural fields. The Indian agriculture system much before the dawn of chemical farming/Green Revolution was in conformity with the natural principles of organic farming. However, realising the adverse impact of mineral based fertilisers, the Government have launched a new scheme 'Paramparagat Krishi Vikas Yojana (PKVY). with an outlay of Rs. 300 crores in the budget 2015-16 in order to improve organic farming in the country. *Taking note of the candid* admission of the representatives of Ministry of Agriculture that the efforts to promote various components of organic farming through various programmes have so far been disjointed and not able to achieve**

the envisioned outcomes, the Committee recommend that the National Project on Organic Farming be made a part of PKVY by suitably tempering with it farming techniques so as to fulfil the aspirational objectives of organic farming. Further, the Committee recommend that the Government bring out a comprehensive policy on organic farming.

2. ***Definition of organic farming:*** **The Committee note that the term 'Organic Farming' has been variously defined by the Ministry of Agriculture (Department of Agriculture & Cooperation) and ICAR, the International Federation of Organic Agriculture Movement (IFOAM), the Food and Agriculture Organization (FAO), and by the Ministry of Commerce for the purpose of trade and commerce under National Programme for Organic Production (NPOP). Undoubtedly, there is an imperative need to bring uniformity in the meaning and definition of 'organic farming/organic farm produce' to avoid any legal hurdle in domestic consumption and international trade promotion. The Committee further recommend that the Government should come out with a comprehensive and well defined strategy on organic farming addressing all the related viz, adequate availability of organic inputs alongwith awareness, standards, financial support, research, education and extension support, insurance, availability and well-defined markets, minimum support price, economical certification process and grievance/complaints redressal mechanism both for domestic and international market and above all for sustained agricultural production.**

3. ***Implementation through single nodal Ministry:*** **The organic farming in the country is being promoted through two Ministries *i.e.* Ministry of Agriculture and Ministry of Commerce. The National Project on Organic Farming (NPOF) and Network Project on Organic Farming (NePOF) are being administered by the Ministry of Agriculture whereas the National Programme for Organic Production (NPOP) is being implemented by the Ministry of Commerce wherein the aspects pertaining to certification of export related agro-organic products and legal framework for matters arising out of exports are addressed and administered. However, the remaining aspects relating to production, ensuring availability of organic inputs and their standards, education and research, financial support, extension support, etc. fall under the domain of the Ministry of Agriculture. Notably, 14 States have formulated schemes to support organic farming. Further, the Committee note that due to want of proper demarcation of responsibilities between the Ministries of Agriculture and Commerce and Industry with respect to promotion of organic farming scheme no-one seems to take the overall responsibility for effective implementation of the scheme. Sharing the concern to the Committee, the representative of the Ministry of Agriculture conceded that the Ministry of Agriculture being nodal Ministry must be entrusted with the entire responsibility for promotion of organic farming including the legal framework assigned to the Ministry of Commerce and Industry for export purposes. Taking note of the testimony of an eminent agriculture scientist that there was lack of integration of the Government Departments like ICAR, KVKs, agricultural universities, the Committee recommend that the Ministry of Agriculture be exclusively assigned the full responsibility for inter-departmental**

integration and promotion of organic farming and export related legal aspects. They also recommend that administrative set up in the Ministry of Agriculture be revisited to strengthen the same and a robust inter-ministerial coordination mechanism be put in place for regular and effective coordination with sister Department of Agricultural Research and Education and synergy with other concerned Ministries in this regard. Further, the Committee recommend that an Organic Finance & Development Corporation for promoting organic farming be set up.

4. ***Integration of all Schemes:*** **Organic farming is being promoted in the country through various schemes/programmes *viz.* the National Mission for Sustainable Agriculture (NMSA), Mission for Integrated Development of Horticulture (MIDH), National Horticulture Mission (NHM), Rastriya Krishi Vikas Yojana (RKVY), Network Project on Organic Farming (NePOF), National Project on Organic Farming (NPOF) under Ministry of Agriculture and National Programme for Organic Production (NPOP) under the Ministry of Commerce. The Secretary, Ministry of Agriculture conceded lack of synergy and integrated approach in the implementation of various schemes run by the Ministry of Agriculture and Ministry of Commerce. Taking note of lack of synchronous efforts in the implementation of the above schemes/programme, the Committee, therefore, recommend:**

   (i) the inter-related schemes be merged so that effective coordination could be secured between the schemes/programmes run by the Ministry of Agriculture and Ministry of Commerce for promotion of organic farming and achieving the desired goals;

   (ii) all the implementing agencies like ICAR, KVKs Agriculture Universities, etc. must have an integrated approach to facilitate transfer of technology relating to organic farming to the real end user *i.e.* the farmer.

5. ***Allocation of Funds:*** **The Committee note that in order to promote organic farming in the country, a sum of Rs. 57.05 crore was sanctioned in the year 2004 to implement the 'National Project on Organic Farming' during the X Plan period. Subsequently, Rs. 101 crores were allocated during the XI Plan period. Thereafter Rs. 293 crores were allocated for the same purpose in the middle of XII Plan period. During the fiscal 2015-16, a special allocation of Rs. 300 crores has been provisioned in the budget for the newly announced scheme - Paramparagat Krishi Vikas Yojana (PKVY) to promote organic farming in the country. The Committee note that given the enormity of the task to promote organic farming throughout the country, the present level of allocation and investment is far from adequate to give the much needed boost to organic farming. Having regard to the testimony of the representative of the Ministry of Agriculture that the allocations for organic farming were quite insufficient *vis-a-vis* conventional farming which receives subsidy on chemical fertilizers usually in the range of Rs. 70,000-1,00,000 crores each year, the Committee find that the current level of allocation for organic farming does not provide a level playing field for promotion of organic farming. Further, the financial assistance of Rs. 20,000 per acre upto 3 years needs to be extended as soil treatment and**

refurbishing takes 3 to 5 years and only after that the produce becomes profitable. The Committee therefore recommend that the allocations for promotion of organic farming be scaled up substantially to meet the intended objective of sustainable agriculture which has the potential to increase 30 per cent more employment by way of resource recycling, certification process, product marketing and packaging.

6. ***Organic Area:*** **The Committee observe that the State-wise details of area under organic certification furnished by the Ministry of Agriculture (Department of Agriculture) shows that the area under organic cultivation in 2013-14 has increased massively in States like Andhra Pradesh (108%), Chhattisgarh (117%), Jharkhand (200%), Orissa (173%) *vis-a-vis* the area under organic cultivation in 2012-13. On the contrary, the area under organic cultivation has declined significantly in Delhi (99%), Bihar (98%), Meghalaya (80%), Arunachal Pradesh (65%), Haryana (50%) in 2013-14 vis-a-vis the area under organic cultivation in 2012-13. The representative of the Ministry could not give specific reply in this behalf. The Committee therefore recommend that they be provided the specific reasons for wide fluctuation/variations in the data on organic cultivation in different states in different years and also the source of the data on organic farming State-wise and year-wise for the last five years.**

7. ***Soil Health and Nutrients Management:*** **The soil of the earth due to its constitutional characteristics enables the growth of millions of micro organisms inside it. The very presence of carbonic content and other organic nutrients like nitrogen, potasium, phosphate, sulphar, iron, zinc, boron, etc. in the soil enable the life-sustaining process to facilitate the growth of plants and million species of micro-organisms. The Committee note that till 1905 when Sir Albert Howard, a Britisher who visited India to study the State of Indian Agriculture, there was no nutrient deficiency in soil and no pest/disease was found. At the time of independence only deficiency in nitrogenic content was noticed. However, as on date, there is deficiency of nine elements of primary, secondary and micro nutrients category. Obviously, the unabated and excessive use of chemical fertilizers in an unscientific manner by farmers just to get higher yield led to exhausting the available natural organic content in the soil to a great extent. However, the Committee have reasons to believe that for the present predicament, the peasantry alone cannot be held responsible. Besides, the Committee note that erosion of soil due to floods and salinization of land have also affected adversely the soil biodiversity by destroying the habitat of the soil biota. Notably, about 121 million hectares of (36 per cent of total geographical area of our country) land is at various stages of degradation in the country. Apart from this, a large portion of our agricultural land is adversely affected due to acidity, toxicity, vertisols, mining, etc. The soil erosion due to floods also has taken its own toll. The Committee however appreciate the initiatives to procure soil health cards to all land holders within the coming three years, which would help in scientific use of nutrients in the soil through application of organic and inorganic fertilizers in a balanced way. They also notice that deficiency of secondary and micro nutrients can be overcome by more and more use of organics and fortified N/P/K fertilizers.**

The Committee further note that the representative of the Ministry of Agriculture also admitted that the extant fertilizer subsidy regime has done the maximum damage to the Indian agriculture. An eminent expert deposed before the Committee that during the sixties before the Green Revolution, we got 50 kg. of grains from 1 kg. of Nitrogen, Phosphorus and Potassisum as of now we get only 10 kg. grain from the same nutrients. The expert also testified that ideal Nitrogen, Phosphorus and potassium ratio should be 4:2:1 but it has come to 7:3:1 all over the country and shockingly to 39:9:1 in the Punjab. The expert therefore stressed the importance of organic farming which while building the ecology increases production and quality of the items produced. Having examined the adverse impact of chemical fertilizers and subsidy thereon to their manufacturers, the Committee come to the inescapable conclusion that the present incentive of fertilizer subsidy needs to be revisited on urgent basis. The Committee, therefore, recommend that:

(i) the subsidy on fertilizers to farmers be directly linked with their income per acre per annum through Direct Transfer Benefit Scheme either through Kisan Card or Aadhaar Card or through any other credible mechanism and be kept with the farmers opting to either procure organic or inorganic fertilizers as per their convenience and requirement mentioned in the Soil Health Card;

(ii) Incentive be given to those farmers who have supplemented carbon contents in the soil to the expected level; and

(iii) the farmers across the country be issued soil health cards and essential advisories before each sowing season for right admixture/combination of organic and other fertilisers for enhanced but sustainable production.

8. ***Availability of Green Manure:*** **Green manure plays a pivotal role in the organic farming. However, there is a huge shortage of this manure as there are no big commercial players to produce it on a mass scale. Presently, it is an in-house production as per needs of the farmers. Since more than 80% are small and marginal farmers, the affordability of producing green manure on a large scale is considerably low and as a result there is huge shortage of green manure. Moreover, the Committee find that there are no uniform standards of production of manure resulting in lack of credibility which further lowers the demand of the same. Besides, subsidy on chemical fertilizers also contributes towards lower demand for organic manure. Apparently, unless green manure of standard quality is produced in adequate quantity, the organic farmer will continue to suffer. The Committee, therefore, recommend that Government need to take urgent steps to incentivise production of green manure of approved standards by the farmers and the entrepreneurs. They also urge the Government to go for management and production of organic manure from millions of tonnes of organic solid waste being produced every day in urban and rural households and elsewhere in the country.**

9. ***Production of Bio-molecules and their Patenting:*** **The Committee note that production of bio-molecules which are living organisms is a very challenging area particularly due to paucity of funds and other social and developmental needs. The organic farming needs the availability and application of bio-molecules to boost up organic production. The Committee are deeply concerned over the huge deficiency of bio-molecules like parasite, predators, etc. and more so, the standards/guidelines to regulate the same for the purpose of their storage, transport and use/application, etc. are yet to be developed. They further note that as per the extant provisions of the World Trade Organisation (WTO), micro biological processes and newly produced micro-organism are patentable. The Committee, therefore, strongly recommend that adequate investment be made for production of bio-molecules and a regulatory regime for their production, storage/transporation and application be set up within six months and the Committee be apprised of the same.**

10. ***Holistic approach towards organic farming:*** **The Committee were informed that approximately 121 million hectares out of the total land of 328 million hectares was at various stages of degradation due to floods, salinisation, mining, erosion and excessive use of chemical fertilizers and pesticides. Further, each year 10 tonnes per hectare soil is eroded by floods resulting in overall 30% of the soil being annually carried into the sea. One of the agricultural experts who appeared before the Committee opined that harvesting of rainwater, its judicious and effective use may herald a better prospect for organic farming. Presently approximately 29% of the total rainwater is harvested in the country. He also submitted that the allocations made under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) need to be used productively in reclaiming the degraded and barren lands, which will not only create assets but also bring livelihood security. Taking note of the decreasing land under agriculture, the need for food security and the expert testimony on the beneficial uses of organic farming, the Committee recommend that:**

- **(i) A holistic and sustained approach for 3 to 4 years to realise the benefits of organic farming should be adopted to promote organic farming as organic agriculture attends concurrently with the physics, chemistry and microbiology of the soil while mineral fertilizers only meet the immediate nutrient needs;**
- **(ii) Funds may be earmarked suitably under MGNREGS for reclaiming the lands already declared not cultivable due to erosion, excessive use of chemicals and fertilizers, salinisation, etc.;**
- **(iii) the efforts of all the stakeholders be supplemented in the implementation process of organic farming particularly for the initial 3-4 years enabling the agro-system fitting into the eco-system;**
- **(iv) Rainwater harvesting and its judicious use, which is at present 15-20% approximately, be accorded due priority and suitably incentivised; and**

(v) **The rearing of domestic animals like cows, buffalows, goats, poultutry, etc. must be made an integral part of the organic farming and incentivised considering the fact that their excreta has all the organic properties which help in enriching the soil by enhancing its porosity and water retention capacity. Further crop-livestock integration would make organic farming more effective and the small farms sustainable.**

11. *Certification of Organic Products:* **The Committee note that organic certification is process oriented and not based on laboratory research. It is not based on the presence or absence of chemical pesticides/toxic residues but on the process of production. For organic produce there are two types of extant certifying mechanisms namely, the Participatory Guarantee Scheme (PGS) and Certification Mechanism. The PGS meant for domestic market allows the farming community to self-certify their organic produce. The Certification Mechanism is administrated under Agricultural and Processed Food Products Export Development Authority (APEDA) for export purpose only. This is being done by APEDA under the National Programme for Organic Production (NPOP), administered by the Ministry of Commerce and Industry. This certification is again process based certification and not based on research which means that though it is acceptable as per international parameters yet it does not solve the question of credibility of organic quality of contents of the product. The NPOP standard was notified in 2001 covering agro crops only. The Committee were apprised by the Ministry of Agriculture that the Bureau of Indian Standards (BIS) have formulated two voluntary standards—Part I crop based, and Part II based on animal, and were awaiting the final approval. The Committee also note the admission of the Secretary, Ministry of Agriculture (Department of Agriculture & Cooperation) that testing and certification system is far from satisfactory and effective testing facilities need to be extended at least initially as an incentive to the producer and the consumer by the Government instead of leaving it to the private players. The Committee also note that there are only 25 laboratories for testing and certifying the organic farming processes and also the organic produce which is grossly inadequate to service the 7.23 lakh hectares of area under certified organic cultivation. It deprives a number of farmers who intend to go the organic way in far flung areas or areas not covered by the testing laboratories. The Committee also note that the process/cost of certification is tedious besides far from fool proof to prevent adulteration. Keeping in view the credibility of certification, the Committee are of the considered view that lack of credibility adversely impacts the domestic demand despite availability of organic products and purchasing power of the consumers.**

Having regards to the need for establishing credible, affordable and easily accessible certification facilities, the need for adequate testing labs, the inadequacy of the extant certification system as conceded by the representative of the Government and the imperative need for giving necessary stimulus to

organic farming and nutritional farm products, the Committee recommend that:

(i) the budget for research and innovative organic input projects should be enhanced to provide impetus to organic farming, research and documentation of Indigenous Technical Knowledges (ITKs), its testing, verification and popularization;

(ii) the number of testing and assessing labs be adequately increased to cover the expanding areas under existing organic farming;

(iii) steps to be taken for better and credible process of certification, more frequent and reliable residue testing, training and dissemination of know-how;

(iv) scientists from agricultural universities and Krishi Vigyan Kendras be involved in evolving a sound and credible certification mechanism for organic seeds and organic products for different climatic zones; and

(v) a new mechanism be evolved to ensure quality content as organic, both for crop and animal products not only for export market but for domestic markets also.

12. ***Fake Organic Produce:*** **One way of establishing a product is organic or not is by checking for pesticide residues. However, to ensure that the product is truly organic, the operators and the certification bodies have to follow the procedures given in National Programme for the Organic Production (NPOP). The Committee also note that APEDA has a mechanism for conducting annual audits and unannounced inspections with the help of experts of the evaluation Committee. They also note that there are non compliances of major and minor nature. Where the organic integrity is likely to be affected, the non compliances are considered as major set back. The Committee were also informed of receipt of 25 complaints from 2012 to 2014 regarding detection of pesticides in consignments exported from India or issues related to labeling from the importing countries such as EU and USA. Agricultural and Processed Foods Export Development Agency (APEDA) is empowered to deal with such complaints. The seriousness of the fake organic produce flooding the market can be gauged from the Secretary's (Departments of Agriculture & Cooperation) own admission that the most famous supposedly organic product, which is available in Delhi is not organic. The Committee are of the strong view that fake organic produce will have far reaching adverse implications for India's organic trade especially international trade. The Committee, therefore, recommend that stringent punishment may be meted out to such entities not only involved in making fake organic produce but also the entities dealing by way of trading and exporting spurious organic products. If the extant legal provisions are insufficient to punish them, suitable steps be taken to empower the agency responsible for monitoring supervision of organic produce or if required, appropriate legislation may be enacted.**

13. *Markets for Organic Products:* **The Committee observe that apart from credibility of organic farm produce, creating demand for organic products is a matter which needs to be addressed. Government, being the biggest spender of public money, can liberate organic farmers from the present predicament by enabling eligible consumers under Food Security Scheme to buy organic produce by getting food subsidy through Direct Benefit Transfer. Apart from this, hospitals, army cantonments, schools under Mid Day Meal Scheme and Railways can be persuaded to procure organic products to create market demand for the same. Further, the scope of villagers' market in towns needs to be explored where fresh agro-organic products can be brought by organic farmers and sold out without any levy being imposed by the Union Government/State Government/Local Authority. The Committee, therefore, recommend that the Government should sponsor a campaign for the awareness creation about the benefits of consumption of organic products so as to create a sizeable demand. Government bodies should be encouraged to procure organic products. The farmers of organic products may be given subsidy through Direct Benefit Transfer. Simultaneously, in order to guarantee the quality of organic produce, the products must be subjected to periodic checks to inspire consumers' confidence and strict penal action taken where the product is not found to be organic. The Committee also recommend that proper incentives should be extended in terms of awareness generation, marketing and branding with an Agmark like seal for sale in order to popularise the organic products.**

14. *Education, Research and Extension:* **The Committee find that the present system of agricultural education, research and extension to farm lands is predominantly oriented towards conventional farming as a result more than 90% funds are earmarked for chemical farming. There are a few institutions/centres which are carrying out research and promotion of organic farming. Surprisingly, as of now, there is not a single Central or State Agriculture University which offers a degree on organic/traditional system of farming. An expert who deposed before the Committee, pleaded that 'we need to stop treating organic farming as an orphan' and it must be treated 'as an equal sibling'. Undoubtedly, the input producing corporations/companies for chemical based agriculture, indirectly contribute to promote conventional farming so as to have their own business flourshing. The Committee also note that extension services are very poor and below par to popularise the organic farming. Due to subsidy element/incentive for conventional farming, the existing agricultural industry is reluctant to undertake research in bio-fertilizers, bio-pesticides and organic seeds. The National Centre for Organic Farming (NCOF) and six other Regional Centres for Organic Farming (RCOFs) engaged in research, training and replication of organic farming are yet to give any tangible results. The Committee are dismayed to observe that organic farming particularly in terms of its education, research and extension reach is yet to make a mark. Surprisingly, there is not a single Central/State Agriculture institute/university which imparts education and offers research degree on organic farming. Keeping in view the great potential of organic farming and the increasing focus on sustainable agriculture, the**

Committee recommend that the budget for organic farming be enhanced adequately and a policy framework be formulated with a view to giving much needed thrust and fillip to education, research and extension to boost up organic farming in the country. Further, the organic farmers must be honoured with suitable awards and incentives to encourage organic farming which becomes quite profitable after 3-4 years. The Committee should like to be apprised of the action taken in this regard within the next six months after the presentation of this Report to the Lok Sabha.

15. *Awareness and Publicity:* **The Committee note the thumb rule of modern management 'whatever is visible, is easier to be sold', in their considered view, holds equally good for promotion of organic farming as well. Unless all the stakeholders including producers, traders and consumers are enlightened about the benefits of organic farming, it will not get the much desired boost. Though the responsibility of awareness and publicity generation has been entrusted to the National Centre of Organic Farming (NCOF) at national level and six other Regional Centres of Organic Farming at regional levels, yet there is hardly any worthwhile visible publicity. Given the apparent benefits of organic farming like cost-effectiveness, soil-health building and preservation of soil bio-diversity, sustainability, eco-friendliness and nutritional value and huge employment generation potential and the diverse climatic-agro zones of the country, the Committee recommend that a broad nation-wide strategy and sustained publicity compaign must be launched to create the much desired awareness about the apparent benefits of organic farming products. Further, the Committee also urge the Government to organise organic farming fairs each year on a big scale as organised elsewhere to popularise it and encourage organic farm products.**

16. *Setting up of Traditional Seed Bank:* **Traditional/organic seeds are one of the most important inputs needed for promotion of organic farming. Traditional seeds have certain resistance to drought, flood, pest, disease and have better quality of nutritional value. The Committee note with concern that in the absence of natural seeds with higher degree of regenerational feature, hybrid seeds are largely being used in organic farming. They also note that the use of traditional seeds leads to cost-effectiveness of the organic farmers as compared to costly hybrid seeds monopolised by big multinational companies. In order to ensure adequate availability of quality organic/natural seeds, the Committee recommend that Organic Seeds Banks be set up in each agro-climatic zone so that their regional biotic properties may be saved and utilised by new generations. The Committee are optimistic that the setting up of Organic Seeds Bank would go a long way in helping the farmers to become debt-free on the one hand and reducing the humongous subsidy burden on the National Exchequer on the other and therefore, Government must come out with a concrete plan for setting up of an Organic Seeds Banks and apprise the Committee within six months of the presentation of this report.**

17. *Training and Skill Development:* **The Committee observe that training of farmers in organic farming techniques and skill development is being imparted by the**

National Centre of Organic Farming (NCOF) at national level and at six Regional Centres of Organic Farming (RCOFs). Statedly, the training consists of all aspects of ploughing, sowing, irrigation, application of bio-fertilizers and pesticides and post-harvest management of farm produce. The Committee note that organic farming requires more scientific support than chemical farming and therefore needs more interventions and proper management of resources, time and energy. Moreover, organic farming involves production mechanism as multi-cropping, mixed cropping, crop-rotation and recycling of post harvest residues. Apart from this, the application of bio-fertilisers, pesticides and production techniques require specialised training, skill development and professional knowledge. The Committee also note that different practices of organic farming are being adopted by farmers of different agro-climatic zones in the country and their cross learning experience can enable farmers to pick up various techniques and practices from each other improving their knowledge and skills to get a better crop at a lower cost. Regretably, ignorant of the benefits of post harvest residues left in the field, in many parts the farmers burn the residue of the harvested crop particularly in case of wheat crop. The burning of post harvest residues hampers the recycling of residues for the purpose of natural manure and creates life threatening pollution. The Committee, therefore, recommend that Government should sponsor training programmes/workshops/ conferences conducted by NGOs/Organic Farmers' Association/Co-operatives to stop such pollution. Simultaneously, all the agricultural universities, both Central and of the States and regional centres of ICAR should organise intensive and periodic training programmes for integrated crop-live stock training programme for organic farmers and in-house training for agricultural technocrats and scientists for enhancing and updating their knowledge and skills with respect to the enormous benefits of organic farming.

18. ***Strategy to boost organic farming:*** **The 'National Project on Organic Farming' was launched as a Pilot project way back in 2004. The Committee feel that the experimental phase is over and the project needs to be renewed. In the considered view of the Committee, organic farming, with its multi-functional approach, is quite capable to deal with the challenges of hunger, malnutrition, poverty of small and marginal farmers, unemployment in rural areas, health related problems, etc. Surely, replication of organic farming over the large areas will lead to a huge fiscal savings on the national exchequer by way of phasing out of chemical fertilizers and reducing investment on health related problems. Indubitably, the organic farming has the potential to contribute considerably towards economy, ecology and above all to the health of the nation. The Committee note that Government of India provides financial assistance of Rs. 20,000 in the form of inputs such as bio fertilizers, bio pesticides, bio seeds, etc. per hectare for farmers who wish to convert to organic farming during the transition period i.e. transition from using chemical fertilizers to farming using organic fertilizers.**

Having regard to the multiple advantages and enormous benefits of organic farming, especially the potential to meet the challenges of hunger, malnutrition and unemployment in rural areas, soil degradation and considering the empirical findings of the Ministry of Agriculture that organic farming provides 30% more jobs as compared to chemical farming and the 2014 report of UNCTAD and UNEP which states that organic farming can double the production, the Committee recommend that:

(i) Special organic zones may be created across the country in the existing agro-climatic zones on the lines of special economic zones;

(ii) Agro-eco tourism centres be opened to attract eco-tourists;

(iii) Clusters of farmers/villages be encouraged for organic farming; and

(iv) The financial assistance in the form of inputs be suitably enhanced and given in cash through Direct Benefit Transfer (DBT) during the period of transition of 3/4 years to set off any losses.

The Committee should like to be apprised of the action taken on each of their recommendation within six months of the presentation of this report to Lok Sabha.

NEW DELHI;
12 *August*, 2015
21 *Shravana*, 1937(*Saka*)

DR. MURLI MANOHAR JOSHI
Chairperson,
Committee on Estimates.

PART III

APPENDIX I

(Para 2.6)

The infrastructure support regarding promotion of organic farming certification, production units for organic inputs, storage, transportation and processing available under Mission for Integrated Horticulture Development (MIHD).

A. Organic Farming

1	2	3	4
	(i) Adoption of Organic Farming	Rs. 20,000/ha.	50% of cost limited to Rs. 10,000/ha. for a maximum area of 4 ha. per beneficiary, spread over a period of 3 years involving an assistance of Rs. 4000/- in first year and Rs. 3000/- each in second & third year. The programme to be linked with certification.
	(ii) Organic Certification	Project based	Rs. 5 lakh for a cluster of 50 ha. which will include Rs. 1.50 lakh in first year, Rs. 1.50 lakh in second year and Rs. 2.00 lakh in third year.
	(iii) Vermi compost Units/organic input production)	Rs. 100,000/ unit for permanent structure and Rs. 16,000/unit For HDPE Vermibed.	50% of cost conforming to the size of the unit of 30'x8'x2.5' dimension of permanent structure to be administered on prorata basis. For HDPE Vermibed. 50% of cost conforming to the size of 96 cft (12'x4'x2') and 1S I5907:2010 to be administered on pro-rata basis.

B. Integrated Post Harvest Management

B.1	Pack House	Rs. 4.00 lakh/unit with size of 9Mx6M	50% of capital cost.
B.2	Integrated pack house with facilities for conveyer belt, sorting, grading units, washing drying and weighing.	Rs. 50.00 lakh per unit with size of 9Mx18M	Credit linked back-ended subsidy @35% of the cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas for individual intrepreneurs.
B.3	Pre-cooling unit	Rs. 25.00 lakh/unit with capactiy of 6 MT	Credit linked back-ended subsidy @35% of the cost of project in general areas and 50% of cost in case Hilly & Scheduled areas, per beneficiary.
B.4	Cold room (Staging)	Rs. 15.00 lakh/unit of 30 MT capacity	Credit linked back-ended subsidy @35% of the cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas, per beneficiary.
B. 5	Mobile pre-cooling unit	Rs. 25.00 lakh	Credit linked back-ended subsidy @35% of the cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas, per beneficiary.

1	2	3	4
B. 6.	Cold Storage (Construction, Expansion and Modernisation)		
	(i) Cold Storage Unit Type 1- basic mezzanine structure with large chamber (of>250 MT) type with single temperature zone.	Rs. 8,000/MT (max. 5,000 MT capacity)	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas, per beneficiary.
	(ii) Cold Storage Unit Type 2-PEB structure for multiple temperature and product use, more than 6 chambers (of >250 MT) and basic material handling equipment.	Rs. 10,000/MT (max. 5,000 MT capacity)	Credit linked back-ended subsidy @35% of the cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas, per beneficiary.
	(iii) Cold Storage Unit Type 2 with add on technology for Controlled Atmosphere.	Additional Rs. 10,000/MT for add on components of controlled atmosphere technology. Detail area as per **Appendix-II**	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas, per beneficiary.
B. 7	Technology induction and modernisation of cold-chain.	Max. Rs. 250.00 lakh for modernization of PLC equipment packaging line, dock leveers, advanced graders, alternate technologies, stacking systems, modernization of insulation and refrigeration, etc. Details are in **Appendix-II**	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas, per beneficiary.
B. 8	Refrigerate Transport vehicles.	Rs. 26.00 lakh for 9 MT (NHM & HMNEH) and *prorate* basis for lesser capacity, but not below 4 MT.	Credit linked back-ended subsidy @35% of the cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas, per beneficiary.
B. 9	Primary/Mobile/ Minimal processing Unit.	Rs. 25.00 lakh/unit	Credit linked back-ended subsidy @40% of the capital cost of project in general areas and 55% of cost in case of Hilly & Scheduled areas.
B. 10	Ripeing chamber.	Rs. 1.00 lakh/MT	Credit linked back-ended subsidy @35% of the capital cost of project in general areas and 50% of cost in case of Hilly & Scheduled areas, for a maximum of 300 MT per beneficiary.
B. 11	Evaporative/low energy cool chamber (8 MT).	Rs. 5,00 lakh/unit	50% of the total cost.

1	2	3	4
B. 12	Preservation unit (low cost)	Rs. 2.00 lakh/unit for new unit and Rs. 1.00 lakh/unit for upgradation	50% of the total cost.
B.13	Low cost onion storage structure (25 MT)	Rs. 1.75 lakh/unit	50% of the total cost.
B.14	Pusa Zero energy cool chamber (100 kg.)	Rs. 4000 per unit	50% of the total cost.
B.15	Integrated Cold Chain Supply System	Project Based. Project should comprise of minimum two components listed under C.1 to C.13 below, with maximum cost of Rs. 600.00 lakh	Credit linked back-ended subsidy @ 35% of the cost of project in general areas and 50% of cost in case of Hilly and Scheduled areas, per beneficiary.
C.	**Establishment of Marketing Infrastructure for Horticultural Produce in Govt./ Private/Cooperative Sector**		
C.1	Terminal markets	Rs. 150.00 crore/project	25% to 40% (limited to Rs. 50.00 crore) as Public-Private Partnership mode though competitive bidding, in accordance with operational guidelines issued separately.
C.2	Wholesale markets	Rs. 100.00 crore/project	Credit linked back-ended subsidy @ 25% of the capital cost of project in general areas and 33.33% in case of Hilly & Scheduled areas, per beneficiary.
C.3	Rural markets/Apni mandies/Direct markets	Rs. 25.00 Lakh	Credit linked back-ended subsidy @ 40% of the capital cost of the project in general areas and 55% in case of Hilly & Scheduled areas, per beneficiary.
C.4	Retail markets/ outlets (environmentally controlled)	Rs. 15.00 lakh/unit	Credit linked back-ended subsidy @ 35% of the capital cost of project in general areas and 50% in case of Hilly & Scheduled areas, per beneficiary.
C.5	Static/Mobile Vending Cart/ Platform with cool chamber.	Rs. 30,000/unit	50% of total cost.
C.6	Functional Infrastructure for:		
	(i) Collection, Sorting/grading, packing units etc.	Rs. 15.00 lakh	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of Hilly & Scheduled areas, per beneficiary.
	(ii) Quality control/analysis Lab.	Rs. 200.00 lakh	100% of the total cost to public sector and 50% of cost to private sector as credit linked back-ended susbsidy.
C.7	Gravity operated ropeway in hilly areas	Rs. 15.00 lakh/km.	Credit lined back-ended subsidy @ 50% of capital costs in Hilly areas.
D.	**Food Processing**		
D.1	Food Processing Units	Rs. 800 lakh/unit	Credit linked back-ended capital investment assistance of 50% of cost in the States of J&K, Himachal Pradesh and Uttarakhand.

APPENDIX II

(Para 2.6)

Component Wise pattern of assistance available under SHM of NMSA for promotion is of organic farming

Component	Pattern of assistance
1. Setting up of mechanized Fruit/ Vegetable market waste/Agro waste compost production unit.	100% Assistance of State Govt./Govt. Agencies upto a maximum limit of Rs. 190.00 lakh/unit and 33% of cost limited to Rs. 63 lakh/unit for individuals/private agencies through NABARD as capital investment for 3000 TPA production capacity.
2. Setting up of State of art liquid/carrier based Bio-fertilizer/Bio-pesticide units	100% Assistance to State Govt./Govt. Agencies upto a maximum limit of Rs. 160.00 lakh/unit and 25% of cost limited to Rs. 40 lakh/unit for individuals/private agencies through NABARD as capital investment of 200 TPA production capacity.
3. Setting up of Bio-fertilizer and Organic fertilizer testing Quality Control Laboratory (BOQCL) or Strengthening of existing Laboratory under FCO.	Assistance upto maximum limit of Rs. 85 lakh for new laboratory and upto a maximum limit of Rs. 45 lakh for strengthening of existing infrastructure to State Government Laboratory under Agriculture or Horticulture Department.
4. Promotion of Organic Inputs on farmer's field (Manure, Vermi-compost, Bio-Fertilizers Liquid/solid, Waste compost, Herbal extracts etc.)	50% of cost subject to a limit of Rs. 5000/- per ha. and Rs. 10,000 per beneficiary. Propose to cover 1 million ha. area.
5. Adoption of organic farming through Cluster approach under Participatory Guarantee System (PGS) certification.	Rs. 20,000/- per ha. subject to maximum of Rs. 40,000/- per beneficiary for 3 year term.
6. Support to PGS system for online data management and residue analysis	Rs. 200 per farmer subject to maximum of Rs. 5000/- per group/year restricted to Rs. 1.00 lakh per Regional Council. Upto Rs. 10,000/- per sample for residue testing (Residue analysis to be done in NABL Labs.)
7. Organic Village adoption for manure management and biological nitrogen harvesting	Rs. 10 lakhs/village for adoption of integrated manure management, planting of fertilizer trees on bunds and promotion of legume inter-cropping through groups/ SHGs etc. (Maximum 10 village per annum/State will be supported).
Training and demonstration on Organic Farming	Capacity building of stakeholders on organic farming, Participatory Guarantee System (PGS), quality control of organic input etc. Rs. 20,000/- per demonstration for a group of 50 participants or more.
8. Support to research for development of organic package of practices specific to State and cropping system	Against specific proposal.
9. Setting up of separate Organic Agriculture Research and Teaching Department	Against specific proposal.

APPENDIX III

(Para 3.6)

State-wise details of total number of Compost production units and Bio-fertilizer production units set up under NPOF through NABARD and total production capacity generated (in MT) by these units sanctioned during October, 2004 till March, 2014

Sl. No.	State	Fruit Veg Waste Comp. Unit		Subsidy released (Rs. Lakh)	Bio-fertilizer		Subsidy release (Rs. Lakh)
		Number	Capacity		Number	Capacity	
1.	Andhra Pradesh	0	0.00	0.00	4	750	70.662
2.	Arunachal Pradesh	0	0.00	0.00	0	0	0.00
3.	Assam	2	6650	12.750	2	50	30.00
4.	Bihar	1	50.00	4.125	0	0	0.00
5.	Chhattisgarh	0	0.00	0.00	0	0	0.00
6.	Delhi	1	100	20.00	0	0	0.00
7.	Goa	1	300	11.600	1	1000	20.00
8.	Gujarat	1	6750	4.773	6	1490	123.984
9.	Haryana	0	0.00	0.00	1	150	17.075
10.	Himachal Pradesh	0	0.00	0.00	1	700	20.00
11.	J&K	0	0.00	0.00	0	0	0.00
12.	Jharkhand	0	0.00	0.00	0	0	0.00
13.	Karnataka	5	26700	184.527	3	450	71.65
14.	Kerala	2	13800	21.287	2	500	30.641
15.	Madhya Pradesh	0	0.00	0.00	1	100	40.00
16.	Maharashtra	1	150	35.712	10	2565	149.8965
17.	Manipur	0	0.00	0.00	0	0	0
18.	Meghalaya	0	0.00	0.00	1	358	5.668
19.	Mizoram	0	0.00	0.00	0	0	0.00
20.	Nagaland	0	0.00	0.00	0	0	0.00
21.	Orissa	0	0.00	0.00	0	0	0.00
22.	Punjab	0	0.00	0.00	4	1110	27.480
23.	Rajasthan	0	0.00	0.00	1	150	8.250
24.	Sikkim	0	0.00	0.00	0	0	0.00
25.	Tamil Nadu	2	200	57.00	3	590	61.6746
26.	Telangana	0	0.00	0.00	5	1400	87.515
27.	Tripura	1	50	20.0	1	150	20.00
28.	Uttar Pradesh	1	1200	19.187	0	0	0.00
29.	Uttarakhand	0	0.00	0.00	2	300	27.005
30.	West Bengal	1	7200	15.125	2	750	13.90
	Total	19	63150	406.086	50	12563	825.401

Note: Units funded by NABARD till 31.03.2014.

APPENDIX IV

(Para 3.6)

Funds released for Organic Farming under RKVY during last 5 years

(Rs. in crore)

Sl.No	State	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
1.	Andhra Pradesh	25.00	**0.12**	**0.71**	0.00	**15.00**	9.50
2.	Arunachal Pradesh	0.00	**0.05**	0.00	0.00	**2.99**	0.00
3.	Assam	0.00	0.00	**4.50**	**9.00**	**11.57**	11.88
4.	Bihar	7.44	0.00	**32.64**	**101.05**	0.00	0.00
5.	Chhattisgarh	3.60	**2.30**	**12.00**	0.00	**1.96**	0.00
6.	Goa	0.00	0.00	0.00	0.18	0.00	0.00
7.	Gujarat	2.65	**1.97**	**2.80**	**108.16**	**11.63**	0.00
8.	Haryana	0.82	**1.55**	0.00	**1.51**	**3.38**	2.00
9.	Himachal Pradesh	1.50	**3.30**	**11.63**	**10.05**	**10.50**	7.50
10.	Jammu and Kashmir	0.00	**0.87**	**3.31**	**0.79**	**2.37**	1.64
11.	Jharkhand	0.00	0.00	0.90	1.58	4.00	0.00
12.	Karnataka	34.40	0.00	0.50	33.00	21.00	14.40
13.	Kerala	0.37	**0.02**	0.00	**1.23**	**1.44**	0.00
14.	Madhya Pradesh	6.44	3.80	11.26	4.40	5.69	3.00
15.	Maharashtra	0.00	0.00	0.00	0.00	0.00	0.00
16.	Manipur	0.00	0.00	**0.35**	**2.82**	**0.75**	0.29
17.	Meghalaya	0.00	0.00	0.00	0.00	0.00	0.00
18.	Mizoram	0.00	0.00	0.00	0.00	0.00	0.00
19.	Nagaland	0.00	0.00	**1.04**	**1.50**	**1.50**	0.60
20.	Orissa	1.03	**4.42**	**11.15**	0.00	0.00	0.00
21.	Punjab	0.00	0.00	**13.50**	0.00	0.00	0.00
22.	Rajasthan	0.00	**22.35**	**6.75**	**3.67**	0.00	0.00
23.	Sikkim	0.00	**1.96**	0.00	**2.50**	**1.20**	0.00
24.	Tamilnadu	17.25	0.00	0.00	0.00	6.60	0.00
25.	Tripura	0.00	**0.40**	**1.15**	0.00	0.00	0.00
26.	Uttar Pradesh	10.00	**3.98**	**15.37**	**16.56**	**28.18**	89.56
27.	Uttarakhand	0.00	**11.51**	**0.00**	**13.31**	**9.44**	3.44
28.	West Bengal	0.32	**0.56**	**0.35**	**0.00**	**6.11**	0.00
	Total	110.82	59.16	129.91	311.31	145.31	143.81

APPENDIX V

(Para 3.6)

Details of financial assistance provided during each of the last four years, State-wise for adoption of organic farming under National Horticulture Mission (NHM)

(Rs. in lakh)

State	Assistance Provided during			
	2010-11	2011-12	2012-13	2013-14
Andhra Pradesh	40.86	00.00	00.00	00.00
Bihar	103.25	43.42	00.00	00.00
Chhattisgarh	103.60	79.50	00.00	00.00
Goa	03.07	00.00	00.00	00.00
Gujarat	240.00	60.00	00.00	20.00
Jharkhand	09.17	06.79	118.40	82.00
Kerala	19.23	59.50	06.40	00.00
Madhya Pradesh	00.11	00.00	00.00	00.00
Maharashtra	14.43	00.00	08.25	00.00
Odisha	00.00	32.86	258.23	200.00
Rajasthan	16.55	197.68	78.50	00.63
Tamil Nadu	16.00	00.00	00.00	34.00
West Bengal	00.00	54.58	00.00	00.00
Andaman & Nicobar Islands	00.00	00.00	1.40	00.00
Total	566.27	534.33	471.18	372.63

APPENDIX VI
(Para 3.6)

Funds released for Organic Farming under Horticulture Mission for North East and Himalayan States (HMNEH)

(Rs. in lakh)

State	2008-09	2009-10	2010-11	2011-12	2012-13
Arunachal Pradesh	99.00	131.00	25.80	123.48	170.00
Assam	66.00	172.10	28.60	35.60	73.65
Manipur	270.00	78.00	51.30	110.00	260.00
Meghalaya	52.50	0.00.	0.00	0.0	0.00
Mizoram	100.00	126.20	152.00	16.50	20.00
Nagaland	64.50	190.00	81.50	123.00	102.00
Sikkim	236.33	315.25	332.48	492.50	265.50
Tripura	93.00	141.00	130.40	79.40	52.00
Jammu & Kashmir	60.60	61.50	67.25	117.10	144.91
Himachal Pradesh	148.80	170.00	216.28	398.21	79.00
Uttarakhand	152.03	84.31	201.00	53.60	40.00

APPENDIX VII

Soil Health Cards Issued during 2009-10 to 2013-14

(Number in lakhs)

Zone/ State	Soil Health Cards issued during				
	2009-10	2010-11	2011-12	2012-13	2013-14
1	2	3	4	5	6
South Zone					
Andhra Pradesh	5.70	5.11	4.17	5.28	3.21
Karnataka	1.71	1.11	1.54	1.69	1.50
Kerala	2.10	1.03	1.66	1.74	1.35
Tamil Nadu	6.22	7.15	12.05	11.16	34.99
Puducherry	0.02	0.02	0.04	0.02	0.01
A&N Islands	0.01	0.01	0.00	0.00	0.00
S Zone Total	15.76	14.44	19.46	19.89	41.05
West Zone					
Gujarat	0.61	12.1	12.18	9.51	11.79
Madhya Pradesh	1.61	2.18	4.36	3.34	3.39
Maharashtra	2.78	2.95	8.54	9.87	8.86
Rajasthan	2.85	3.15	3.77	3.13	3.27
D&N Haveli	0.00	0.00	0.00	0.00	0.00
Chhattisgarh	0.59	0.95	0.99	0.95	1.16
Goa	0.23	0.21	0.12	0.18	0.15
W Zone Total	8.67	21.54	29.96	26.98	28.62
North Zone					
Haryana	3.34	3.64	3.59	4.43	2.36
Punjab	2.98	2.16	2.88	1.16	0.74
Uttarakhand	0.47	0.37	0.45	0.45	0.68
Uttar Pradesh	19.39	25.97	33.52	31.91	32.11
Himachal Pradesh	1.30	1.35	1.25	1.22	1.22
J&K	0.20	0.3	0.32	0.35	0.35
Delhi	0.01	0.006	0.01	0.0046	0.004
N Zone Total	27.69	33.769	42.02	39.5246	37.464
East Zone					
Bihar	1.44	1.24	1.98	2.59	2.4
Jharkhand	0.10	0.07	0.04	0.073	0.1
Odisha	1.30	1.24	1.49	2.19	2.54
West Bengal	0.36	0.19	0.00	0.42	0.48
E Zone Total	3.20	2.74	3.51	5.273	5.52

1	2	3	4	5	6
North-East Zone					
Assam	0.60	0.60	0.61	0.61	0.61
Tripura	0.12	0.12	0.12	0.12	0.17
Manipur	0.25	0.25	0.25	0.25	0.068
Meghalaya	0.08	0.02	0.10	0.08	0.026
Nagaland	0.11	0.12	0.12	0.14	0.14
Arunachal Pradesh	0.06	0.09	0.10	0.14	0.078
Sikkim	0.07	0.07	0.11	0.18	0.15
Mizoram	0.20	0.20	0.45	1.45	0.20
NE Zone Total	1.49	1.47	1.86	2.97	1.442
Grand Total	56.81	73.99	96.8066	94.6376	114.10

ANNEXURE I

MINUTES OF THE ELEVENTH SITTING OF THE COMMITTEE ON ESTIMATES (2014-15)

The Committee sat on Thursday, the lst January, 2015 from 1145 to 1330 hrs. in Room No. 62, Parliament House, New Delhi.

PRESENT

Dr. Murli Manohar Joshi — *Chairperson*

MEMBERS

2. Shri Kirti Azad
3. Shri Om Birla
4. Shri Ashwini Kumar Choubey
5. Shri Kalikesh N. Singh Deo
6. Shri Md. Salim
7. Shri Arvind Sawant
8. Shri Sudheer Gupta
9. Shri Jai Prakash Narayan Yadav

SECRETARIAT

1. Shri P.C. Koul	—	*Director*
2. Shri Srinivasulu Gunda	—	*Additional Director*
3. Shri U.C. Bharadwaj	—	*Deputy Secretary*

WITNESSES

1. Dr. T.C. Chaudhari	—	Former Director (Research), Tea Board, National Tea Research Foundation, Kolkata
2. Shri Ketan Dand	—	CEO, Fort Willis Organic Farms, Mumbai.

2. The sitting of the Committee could not be convened at the appointed hour *i.e.* 1100 hrs. due to lack of quorum. At around 1140 hours the Chairperson informed the Members present that they were still short of quorum (10 Members) by one. Most of the Members, however, stated that they had come to New Delhi from far flung constituencies with the sole purpose of attending this Sitting to hear the witnesses on a subject of immense significance for the country. The Chairperson also pointed out that the two witnesses had also come to New Delhi from Kolkata and Mumbai respectively to tender evidence. The Committee, therefore, decided to transact their business of the day with nine Members.

3. The Chairperson then directed that the first witness be ushered in.

(At around 1145 hrs. Dr. T.C. Chaudhari took his seat).

4. The Chairperson welcomed the witness and drew his attention to Direction 55(1) of 'Directions by the Speaker, Lok Sabha' regarding confidentiality of the proceedings of the Committee. After the customary introduction was over, the Chairperson directed the witness to brief the Committee on the subject 'National Project on Organic Farming'. The Members raised several queries and sought clarification from the witness. The Chairperson, thereafter, directed the witness to send to the Committee Secretariat information on unanswered queries at the earliest.

The witnesses then withdrew.

5. The Chairperson then directed that the second witness be ushered in.

(At around 1245 hrs. Shri Ketan Dand took his seat).

6. The Chairperson welcomed the witness and drew his attention to Direction 55(1) of 'Directions by the Speaker, Lok Sabha' regarding confidentiality of the proceedings of the Committee. After the customary introduction was over the Chairperson directed the witness to brief the Committee on the subject 'National Project on Organic Farming'. The Members raised several queries and sought clarification from the witness. The Chairperson, thereafter, directed the witness to send to the Committee Secretariat information on unanswered queries at the earliest.

The witnesses then withdrew.

The Committee then adjourned.

A verbatim record of the proceedings has been kept.

ANNEXURE II

MINUTES OF THE THIRTEENTH SITTING OF THE COMMITTEE ON ESTIMATES (2014-2015)

The Committee sat on Tuesday, the 20th January, 2015 from 1100 to 1400 hrs. in Room No. G-074, Parliament Library Building, New Delhi.

PRESENT

Dr. Murli Manohar Joshi — *Chairperson*

MEMBERS

2. Shri Sultan Ahmed
3. Shri Kirti Azad
4. Shri Kalyan Banerjee
5. Shri Kalikesh N. Singh Deo
6. Shri P.C. Gaddigoudar
7. Shri Sudheer Gupta
8. Dr. Sanjay Jaiswal
9. Shri P. Kumar
10. Shri K.H. Muniyappa
11. Shri Ravindra Kumar Pandey
12. Shri J.C. Divakar Reddy
13. Shri Md. Salim
14. Shri Arvind Sawant
15. Shri Ganesh Singh
16. Shri Rajesh Verma

SECRETARIAT

1. Shri P.V.L.N. Murthy	—	*Joint Secretary*
2. Shri Srinivasulu Gunda	—	*Additional Director*
3. Shri U.C. Bharadwaj	—	*Deputy Secretary*

WITNESSES

Ministry of Agriculture

[Department of Agriculture and Co-operation]

1.	Shri Ashish Bahuguna	—	Secretary
2	Shri Avinash K. Srivastava	—	Additional Secretary
3.	Smt. I. Rani Kumudini	—	Joint Secretary
4.	Shri Uppal Kumar Singh	—	Joint Secretary (PP)
5.	Shri A.K. Sikka	—	DDG, NRM, ICAR
6.	Dr. P.P. Biswas	—	Principal Scientist, ICAR
7.	Dr. S.N. Sushil	—	Plant Protection Adviser, PPQS, Faridabad
8.	Dr. S. K. Choudhary	—	ADG(S & W), ICAR
9.	Dr. Vandana Dwivedi	—	ADC(INM), DAC
10.	Shri Sanjay Kr. Lohani	—	Joint Secretary, Department of Fertilizer
11.	Dr. P.V.S.M. Gouri	—	Adviser, APEDA

Ministry of Agriculture

[Department of Agricultural Research and Education]

[Indian Council of Agricultural Research]

1.	Dr. S. Ayyappan	—	Secretary (DARE) & DG(ICAR)
2.	Dr. A.K. Sikka	—	Deputy Director General (NRM), ICAR
3.	Dr. A.K. Singh	—	Deputy Director General (Extn.), ICAR
4.	Dr. B. Mohan Kumar	—	Assistant Director General (AAF&CC), ICAR
5.	Dr. Suresh Kumar Chaudhari	—	Assistant Director General (S&WM), ICAR
6.	Dr. B. Gangwar	—	Director, Project Directorate for Farming System Research
7.	Dr. N. Ravi Shankar	—	Principal Scientist, Project Directorate for Farming System

2. The proceedings commenced with the Chairperson welcoming the Members to the Sitting. The Committee, thereafter, held internal deliberations for a while. The Chairperson then directed that the witnesses be ushered in.

At around 1115 hrs. the witnesses took their seats.

3. The Chairperson welcomed the witnesses and drew their attention to Direction 55 (1) of Directions by the Speaker, Lok Sabha, regarding confidentiality of the proceedings of the Committee. After the customary introduction was over, Secretary, DARE & Director General, Indian Council of Agricultural Research, made an audio-visual presentation on the subject 'National Project on Organic Farming'. The Members raised several queries and sought clarifications from the witnesses. The Chairperson, thereafter, directed the witnesses to furnish to the Committee Secretariat detailed replies to the points to which they could not readily respond at the earliest.

The witnesses then withdrew.

A verbatim record of proceedings has been kept.

The Committee then adjourned.

ANNEXURE III

MINUTES OF THE FOURTEENTH SITTING OF THE COMMITTEE ON ESTIMATES

The Committee sat on Monday, the 9th February, 2015 from 1500 to 1730 hrs. in Room No. '53', Parliament House, New Delhi.

PRESENT

Dr. Murli Manohar Joshi — *Chairperson*

MEMBERS

2. Shri Sultan Ahmed
3. Shri Kirti Azad
4. Shri Kalyan Banerjee
5. Col. Sonaram Choudhary
6. Shri Sanjay Dhotre
7. Shri P.C. Gaddigoudar
8. Shri Ravindra Kumar Pandey
9. Shri K. N. Ramachandran
10. Shri J.C. Divakar Reddy

SECRETARIAT

1. Shri P.V.L.N. Murthy — *Joint Secretary*
2. Shri P. C. Koul — *Director*
3. Shri Srinivasulu Gunda — *Additional Director*

WITNESSES

1. Shri G. N. Raju Yadav	—	Organic Farmer, Krishna District, Andhra Pradesh
2. Dr. Vandana Shiva	—	Director, NAVDANYA, New Delhi
3. Samaj Vikas Sansthan, Meerut	—	(i) Dr. K.K. Tomar, Director
		(ii) Dr. S.P.S. Sirohi, Honorary Agricultural Scientist
		(iii) Ch. Rajpal Singh, Agriculturist
		(iv) Shri Mahender Singh, Agriculturist

2. At the outset, the Chairperson welcomed the Members of the Committee to the sitting and briefed them about the agenda. The Chairperson then directed that the first witness be ushered in.

(At around 1520 hrs. Shri G.N. Raju Yadav took his seat.)

3. The Chairperson welcomed the witness and drew his attention to Direction 55 (1) of Directions by the Speaker, Lok Sabha, regarding confidentiality of the proceedings of the Committee. After the customary introduction was over, the Chairperson asked him to brief the Committee about his experience as a farmer involved in organic farming and the challenges/constraints being faced in the promotion of organic farming in the country. He also desired the witness to suggest viable solutions to the difficulties being faced by organic farmers' community. The witness shared his experience of organic farming and related issues in detail. He also submitted to the Committee records pertaining to his achievements. The Members also raised several queries and sought clarifications from the witness. The Chairperson, thereafter, asked the witness to furnish in writing at the earliest to the Committee Secretariat detailed replies to the points to which he could not readily respond.

The witnesses then withdrew.

4. The Chairperson then directed that the Second Witness be ushered in.

(At around 1600 hrs. Dr. Vandana Shiva took her seat.)

5. The Chairperson welcomed the witness and drew her attention to Direction 55 (1) of Directions by the Speaker, Lok Sabha, regarding confidentiality of the proceedings of the Committee. After the customary introduction was over, the Chairperson asked Dr. Shiva to brief the Committee about the issues germane to organic farming in the country, *viz,* the general perception about unviability of organic farming, shortage of organic inputs and other inputs supply related constraints, standardization and certification related matters, nutrition issues, etc. The witness presented her perspective on all these aspects and related matters. The Members also raised several queries and sought clarifications from the witness. The Chairperson, thereafter, asked the witness to furnish to the Committee Secretariat detailed replies to the points to which she could not readily respond to at the earliest.

The witnesses then withdrew.

6. The Chairperson then directed that the representatives of Samaj Vikas Sansthan be ushered in.

(At around 1650 hrs. Dr. K.K. Tomar and his colleagues took their seats.)

7. The Chairperson welcomed the witnesses and drew their attention to Direction 55 (1) of Directions by the Speaker, Lok Sabha, regarding confidentiality of the proceedings of the Committee. After the customary introduction was over, the Chairperson asked the Principal Witness to apprise the Committee about the activities being undertaken by their organization and their suggestions for boosting organic farming in India. The Principal Witness briefed the Committee about the various measures being taken by their Organization for encouraging and supporting organic farming in

parts of Western Uttar Pradesh. The accompanying witnesses also shared their experiences with the Committee. Some of the major suggestions given by them included ensuring a marketing mechanism for organic produce, need to make certification more farmer friendly and affordable, greater availability of relevant agricultural implements, IT enabled mechanism for organic farmers to provide them an information and best practices exchange platform, organization of cluster/cooperative/mandal level communities for those involved in organic farming, taxation deterrence for environment damaging farming practices, etc. The Members also raised several queries and sought clarifications from the witnesses. The Chairperson, thereafter, asked the representatives of Samaj Vikas Sansthan to furnish to the Committee Secretariat detailed replies to the points to which they could not readily respond to at the earliest.

The witnesses then withdrew.

8. The Committee then adjourned to meet at 1100 hrs. on the next day.

The verbatim proceedings was kept on record.

ANNEXURE IV

MINUTES OF THE SIXTEENTH SITTING OF THE COMMITTEE ON ESTIMATES (2014-2015)

The Committee sat on Tuesday, the 10th February, 2015 from 1430 to 1545 hrs. in Room No. '53', Parliament House, New Delhi.

PRESENT

Dr. Murli Manohar Joshi — *Chairperson*

MEMBERS

2. Shri Sultan Ahmed
3. Shri Kirti Azad
4. Shri Kalyan Banerjee
5. Shri Ashwini Kumar Choubey
6. Col. Sonaram Choudhary
7. Shri Ramen Deka
8. Shri Kalikesh N. Singh Deo
9. Shri Sanjay Dhotre
10. Shri Sudheer Gupta
11. Dr. Sanjay Jaiswal
12. Shri Vinod Khanna
13. Shri P. Kumar
14. Shri Ravindra Kumar Pandey
15. Shri K.N. Ramachandran
16. Shri J.C. Divakar Reddy
17. Md. Salim

SECRETARIAT

1. Shri Devender Singh — *Additional Secretary*
2. Shri P.V.L.N. Murthy — *Joint Secretary*
3. Shri P.C. Koul — *Director*

WITNESSES

1.	Ms. Kavitha Kuruganti	Convener, Alliance for Sustainable and Holistic Agriculture (ASHA), Hyderabad
2.	Shri Vijaysinh Zala	President, Mahatma Gandhi Pratishthan, Godhra

2. The proceedings commenced with the Chairperson welcoming the Members to the Sitting. The Committee, thereafter, held internal deliberations for a while on the agenda of the day. The Chairperson then directed that the first witness be ushered in.

(At around 1430 hrs. Ms. Kavitha Kuruganti took her seat.)

3. The Chairperson welcomed the witness and drew her attention to Direction 55 (1) of Directions by the Speaker, Lok Sabha, regarding confidentiality of the proceedings of the Committee. After the customary introduction, the witness with the permission of the Chairperson briefed the Committee on the subject 'National Project on Organic Farming'. The witness deposed about the farmers' incomes, environmental sustainability, control of resources, support of urban consumers of agricultural produce, comparative yields from intensive chemical farming and organic farming, gestation period for transition from chemical farming to organic farming, need to shift focus from exports oriented organic farming to domestic consumption approach, rationalizing certification norms and expenditure thereupon, threat from chemical run off to organic farming in some of the granary States, increase in outlay for organic farming as well as RKVY, full subsidization of group certification of organic produce as being done in Karnataka, standardization of cost norms for organic farming as different norms existed under various schemes of the Central and State Governments, etc. The Members raised several queries and sought clarifications from the witness. The Chairperson, thereafter, asked the witness to furnish to the Committee Secretariat detailed replies to the points to which she could not readily respond at the earliest.

The witnesses then withdrew.

4. The Chairperson then directed that the second Witness be ushered in.

(At around 1525 hrs. Shri Vijay Sinh Zala took his seat.)

5. The Chairperson welcomed the witness and drew his attention to Direction 55 (1) of Directions by the Speaker, Lok Sabha, regarding confidentiality of the proceedings of the Committee. After the customary introduction was over, the Chairperson asked the witness to brief the Committee about his grass root experience of organic farming in the country. He also desired the witness to come up with some viable solutions in regard to the constraints/difficulties being faced by organic farmers in the country. The witness briefed the Committee about his NGO performing the role of a producer organization in some areas of the States of Gujarat and Madhya Pradesh, value addition in organic produce for improving its marketability and financial viability, need for farmers Marketing Facilitation Centres, simultaneous dual cropping, etc. The Members also raised several queries and sought clarifications from the witness. The Chairperson, thereafter, asked the witness to furnish to the Committee Secretariat detailed replies to the points to which he could not readily respond at the earliest.

The witnesses then withdrew.

6. The verbatim proceedings were kept on record.

The Committee then adjourned.

ANNEXURE V

MINUTES OF THE SEVENTEENTH SITTING OF THE COMMITTEE ON ESTIMATES (2014-2015)

The Committee sat on Tuesday, the 10th March, 2015 from 1515 hrs. to 1650 hrs. in Room No. '62', Parliament House, New Delhi.

PRESENT

Dr. Murli Manohar Joshi — *Chairperson*

MEMBERS

2. Shri Sultan Ahmed
3. Col. Sonaram Choudhary
4. Shri Kalikesh N. Singh Deo
5. Shri P.C. Gaddigoudar
6. Dr. Sanjay Jaiswal
7. Smt. Kavitha Kalvakuntla
8. Shri Nalin Kumar Kateel
9. Shri Vinod Khanna
10. Shri K.H. Muniyappa
11. Shri Ravindra Kumar Pandey
12. Shri J.C. Divakar Reddy
13. Shri Kirti Vardhan Singh

SECRETARIAT

1. Shri Devender Singh	—	*Additional Secretary*
2. Shri P.C. Koul	—	*Director*
3. Shri Srinivasulu Gunda	—	*Additional Director*

WITNESSES

1. Dr. Mangala Rai	Former Secretary, Department of Agricultural Research and Education & Director General, Indian Council of Agricultural Research
2. Shri Sunil Mansinghka	Coordinator, Gau Vigyan Anusandhan Kendra, Nagpur

2. The proceedings commenced with the Chairperson welcoming the Members to the Sitting. The Chairperson then directed that the witnesses be ushered in.

(At around 1515 hrs. the witnesses took their seats.)

3. The Chairperson welcomed the witnesses and drew their attention to Direction 55 (1) of Directions by the Speaker, Lok Sabha, regarding confidentiality of the proceedings of the Committee. After the customary introduction was over, the Chairperson asked the witness at Sl. No. (1) above to brief the Committee about the critical issues like productivity of organic farming, impact of organic farming on food security, availability or otherwise of organic manure, seeds and their standards, secondary nutrients, pest management, pricing of organic products, phytosanitary measures of WTO regulating import and export of organic agro products etc. The said witness briefed the Committee about these issues and other challenges pertaining to organic farming. He also explained to the Committee the importance of primary, secondary and micro nutrients, the essentiality of carbon contents for soil health and their return in terms of crop productivity, integration of farming leading to compatibility between agro and eco systems. He also apprised the Committee of the need for efficiency in usage of water for growing crops, need for a system for production of parasite predators, their transportation and storing facilities, as also the need for a judicious blend of farming practices for optimum results without upsetting the ecological balances, etc.

4. Thereafter, the second witness briefed the Committee about the activities being undertaken by their organization in promoting and carrying out organic farming, the various initiatives taken by their organization for encouraging use of byproducts of cow dung and cow urine in organic farming and various other endeavours, etc.

5. Before the sitting concluded the Chairperson directed the witnesses to furnish replies to the queries that remained unanswered or partially answered to the Committee Secretariat within a fortnight. He also directed them to send detailed replies to the List of Points being sent to them by 23 March, 2015. The witness assured to submit the replies as desired.

The witnesses then withdrew.

6. The verbatim record of the proceedings was kept on record.

The Committee then adjourned.

ANNEXURE VI

MINUTES OF THE SIXTH SITTING OF THE COMMITTEE ON ESTIMATES (2015-16)

The Committee sat on Monday, the 10 August, 2015 from 1520 hrs. to 1600 hrs. in Committee Room 'D', Parliament House Annexe, New Delhi.

PRESENT

Dr. Murli Manohar Joshi — *Chairperson*

MEMBERS

2. Shri Sultan Ahmed
3. Shri Kirti Azad
4. Shri Anil Shirole
5. Shri Ashok Chavan
6. Shri Kalikesh N. Singh Deo
7. Shri P.C. Gaddigoudar
8. Dr. Sanjay Jaiswal
9. Shri Arjun Ram Meghwal
10. Shri Ravindra Kumar Pandey
11. Shri J.C. Divakar Reddy
12. Md. Salim
13. Shri Arvind Sawant
14. Shri Ganesh Singh

SECRETARIAT

1. Shri Devender Singh — *Additional Secretary*
2. Shri Vipin Kumar — *Director*
3. Shri Srinivasulu Gunda — *Additional Director*
4. Shri U.C. Bharadwaj — *Deputy Secretary*

2. At the outset, the Chairperson welcomed the Members to the Sitting of the Committee and introduced newly elected Member (Shri Anil Shirole) to the Committee.

3. The Committee then took up for consideration the draft Report on the subject 'National Project on Organic Farming' pertaining to the Ministry of Agriculture (Department of Agriculture & Cooperation).

4. The Committee adopted the Report without any modifications and authorized the Chairperson to finalize the Report and present the same to Lok Sabha.

The Committee then adjourned.

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